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“ PRODUCTIVITY, GROWTH AND REGIONAL DISPERSAL OF INDIAN INDUSTRIES-1956-95”

A Dissertation Submitted

For the fulfillment of the Requirement for

The Degree of Doctorate in Philosophy

BY

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DECLARATION

I hereby declare that the work embodied in the Dissertation entitled "Productivity, Growth and Regional Dispersal of Indian Industries-1956-95" carried out by me under the Supervision of Professor V. V. N. Somayajulu, Department of Economics, University of Hyderabad, has not been submitted for any other Degree either in part or in full to this or any other University or Institution.

Place: University of Hyderabad Debasis Patnaik

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CERTIFICATE

This is to Certify that the Thesis Entitled “Productivity, Growth and Regional Dispersal of Indian Industries-1956-95” being submitted by ***Debasis Patnaik*** in Partial Fulfillment of the requirements for the Award of the Degree of Doctor of Philosophy in Economics is a Record of the Bonafide Work carried out by him under my Supervision and Guidance.

This Thesis has not been submitted previously either in Part or Full to any other University or Institution of Learning for the Award of any Degree.

Place: Hyderabad

Date: January 2005

Professor V. V. N. Somayajulu
(Supervisor)

Head of the Department of Economics

Dean of School of Social Sciences

THIS THESIS IS DEDICATED TO

THE FOND MEMORY OF

My Dearest Grand Mother Srimati Hari Priya Patnaik
Who Passed Away in the Month of October 1997

And

My Revered Father Late Professor Srish Chandra Patnaik
Who Passed Away in the Month of December 1989

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Introduction

1.1Theme of Study:

Industrial development is the fulcrum and an essential catalytic requisite for rapid pace of development. Kuznets' comparison of 50 countries has shown a marked increase of manufacturing output with rising per capita income. To him, marked increases in productivity are usually achieved in the face of population growth and rising labor force through major innovations that could be defined as 'application of new bodies of tested knowledge to the processes of economic production'[1]. Chenery[2] traced a statistically significant relationship between per capita income and degree of industrialization [Also Kaur Kulwinder -Structure of Industries in India[3]]. All these studies stressed that without industrial development, economy cannot have progress; and will touch a low and/or a limited frontier of development. Development is to be noticed in growth of manufacturing industry resulting from opening up of new markets and new processes of deepening and widening of capital. Productivity growth in manufacturing industry is the major and sustainable propeller to economic growth and for structural transformation of now developed economies[4].

1-Kuznets, S. -***Six Lectures on Economic Growth***-Free Press of Glenocoe, Inc, 1959, pp-122.

2- Chenery, H.B.- Patterns of Industrial Growth-***American Economic Review***, 50, September 1960-p-624-654.

3- Kaur Kulwinder in "***Structure of Industries in India: Pattern, Framework, Disparities***" also writes that that level of per capita income has been found to be correlated with degree of industrialization- Deep and Deep Publications, 1983- Ch-1, pp-18.

4- Kuznets, S. -***Modern Economic Growth-Rate, Structure and Spread***, New Haven: Yale University Press, 1966, pp-127.

The current study absorbed the genesis of results of the above and similar studies that led to trace causal inter-relations between Industries' Growth, Partial and Total Factor Productivities, Regional Dispersal and Development of Industries in India. The theme of the study is titled "Productivity, Growth and Regional Dispersal of All-India Industries-1956-1995". The analysis relates to twenty industry groups at 2-digit level of aggregation on the basis of National Industrial Classification (NIC), 1987, that corresponds to International Standard Industrial Classification (ISIC). The Time Series Analysis of the study has been carried out over time periods of 4 decades, separately for each decade, and for the long period of 1956-95, together, wherever needed, for temporal comparison of results. Productivity, growth and dispersal measures of individual industries at national and regional levels are analyzed for distinct size measures of industry. Regional dispersal analysis of size measures for each of the twenty two-digit industries has been carried out using states level data from 1959 on-wards, because states level data for the years 1956-1958 were not available.

While earlier authors and researchers have studied productivity, growth relations and regional dispersal of Industries separately, hardly any studies on regional dispersal of industries due to causal links with productivity and growth are noticed. This study is a contribution to knowledge of economic science and practice in attempting to find the causal links between productivity, growth and regional dispersal of industries.

1.2 Objectives of the study:

1- To analyze partial productivity ratios of factors; and Measurements of Total Factor Productivity of industry groups; and output elasticities of those factors as to infer returns to scale and to trace causal linkages between these measurements.

2- To analyze temporal shifts in industrial growth of the industry groups in India and to trace the causal relations with other variables, as in (1) above.

3- To trace the extent of industrial dispersal across states over time periods for (i) small states and Union Territories (UT), (ii) large states, separately and for (iii) All States and all UT taken together. Then to trace causal relationships of the dispersal measures of NVA and Employment at sub-national levels with the TFP, Partial Productivity of each Factor and Capital Intensity for each of the industry groups in the short-run and the long periods.

4- To draw policy guidelines based on Causal inter-relations analyzed temporally for productivity, growth and dispersal indices of Indian industries.

1.3 Hypotheses and Research Questions:

a- Whether Total Factor Productivity (TFP) manifesting Hicksian neutral technological progress and Partial Factor Productivities, influences and is influenced by Growth; and Whether Elasticities and Returns to Scale in Indian Industries leads to identification of Temporal Shifts in Scale Economies; and Whether Ranking of Industries in terms of the respective variables throws light on that variables' contribution to industries growth;

b- Whether higher capital intensities in individual industries are reflected in higher growth rates of TFP and therefore Output growth of those industries;

c- Whether industries at 2-digit level of aggregation having higher growth rates in output and employment have higher regional dispersal rates, revealed by both Herfindahl and Coefficient of Variation indices of regional dispersal of each industry group; and

d- Whether Growth in Size Variables and Structural Ratios of Industries led to regional dispersal over time; and whether it implies testing Self-Perpetuation Hypothesis or Williamson Hypothesis of Industrial Development that can reveal nature of Industrial Development in India as one of leading to Concentration initially and Diversification and Development ultimately over time; and whether all these results of analysis can be tested by Grossack's instruments of analysis to cause to infer evenness or unevenness of regional shares of Indian Industries' leading to further regional dispersal or concentration.

1.4 Importance and Relevance of the Study:

More than 50 years of planning for development in India saw considerable increase in industrial base, diversification, structural changes, and changes in growth rates and short spells of stagnation/slow growth of industry. But much less is known regarding causal factors for regional dispersal of industries, extent of response to each of those causal factors, linkage measures of regional diversification and growth rate differential of distinct industries. Hence this study probes into the economic mechanism of causation to explain inter-relations of Regional Dispersal Measures and Growth Measures and also particularly of Returns to Scale, Capital Intensity, Partial and Total Factor Productivity Measures, linkages with each Regional Dispersal Measure. The three decades till mid-1980s onwards to date and particularly mid-1990s underwent Import Liberalization, Privatization, Globalization and Economic Reforms of all Major Sectors including Monetary, Financial, Fiscal, Trade and Infrastructural Services in India. This accordingly needed an integrated approach to industrial planning that underwent structural adjustment and stabilization policies or New Economic Policies for balanced regional growth of Indian industries. This in turn needed integration of productivity approach and regional equity approach; both to be fully supported by development of capital and human investment. This enables fulfillment of people's aspirations and participation of acquired skill base of local population and of skill mobility of labor force and ultimately convergence and divergence across states towards development of rural and backward regions and decentralized rural and urban industrial sector for balanced regional development. This analysis of dispersal measures associated with productivity and growth measures is a new addition to knowledge and would enable us to draw policy guidelines not merely for allocation of scarce resources but also to enable weaker sections to reap the benefits and to improve industrial skill spread quantitatively and qualitatively in rural areas.

Total Factor Productivity/ measurement of technical change led to growth leading to cause for regional equity or imbalances otherwise in the long-run. Further, industrial employment and growth dichotomy that depends not only on the pace of technological change but also on social adjustments to exploit new products and processes[5] and learning effects[6]. All such hypotheses provide an adequate base for further research studies of industrialization, competitiveness and causal factors thereof. Analytical results of this current study lead to further researches thus envisaged.

1.5 Review of Literature and Research Gaps:

A brief review of a few major studies on productivity, growth but a few on regional dispersal of industries as carried out making use of both time series and cross section data led to find out the research gaps for the purposes of our study.

Ahluwalia's 'Industrial Growth in India- Stagnation since the mid-sixties' (1987) [5] analyzed long-term trends in industrial growth, focussing on causes of industrial stagnation in mid-sixties due to poor growth performance and dismal productivity achievements in industrial sector, resulting from slow growth in agricultural incomes, poor management and low investment in infrastructure sectors.

Goldar in his 'Productivity Growth in Indian Industry' (1986) [6] analyzed trends in Partial Productivities, TFP and K-intensity at the aggregate level. He found a significant rising trend in L-productivity, K-intensity and a significant falling trend in K productivity. TFP growth rate of 1.3% is low in relation to rate of growth in industrial output but a strong positive relationship between output growth and productivity growth is noticed. His study results for India are similar to findings in other countries' studies. The TFP growth in 'traditional' industries was marked positive but was not so for many 'modern' industries due to (i) incomplete 'learning effect' (ii) sharp fall in growth rate of fixed capital from 12.3% p. a. in 1959-65 to 5.8% p.a. in 1965-79 and (iii) fall in growth rates in real value added and labor. There was a reversal of the declining trend in K-productivity but K-deepening slowed down after 1970.

Goldar study did not address regional dispersal measures or to regional policies assessment but only to efficiency measures of national industries linkages.

5- Ahluwalia, Isher Judge- ***Industrial Growth in India-Stagnation in the Mid-Sixties***-Oxford University Press-Delhi-1985.

6- Goldar B. N. - '***Productivity Growth in Indian Industry***' Oxford University Press, (1986).

Isher Judge Ahluwalia's 'Productivity and Growth in Indian Manufacturing' (1987)[7] pursues the issue of productivity growth in organized manufacturing over longer period (1959-86) and in detail. It found time series and pooled series estimates of statistically insignificant growth in TFP through estimation of Translog production function similar to earlier studies' estimates of TFPG during 1959-1983 but a reverse trend towards significant TFPG after 1982-3 for market use based industrial sectors, particularly high growth in productivity of consumer durables and capital goods sectors but not of intermediate goods sector unlike other countries' TFPG. Negative effect between higher capital intensity and productivity growth was due to policy distortions resulting into fragmentation of firms. Thus neither of the studies of I. J. Ahluwalia addressed to measures of regional dispersal of industries, leaving it as a Research gap.

Dhananjayan R.S. and N. Sasikala Devi (1998) [8] worked on objectives of estimating TFPG for 2-digit manufacturing and analyzed the behavioral characteristics. TFP growth yielded low magnitudes but a spurt in TFP was noticed in mid 70s, late 80s and early 90s. The Study inferred that ad-hocism in policy programs needed to be toned down and long- term policy directions devised and adhered to. Their study did not address to regional dispersal.

Oulton and Mahoney's study (1994) [9] of UK manufacturing for 1954-86 at three digit level of industrial aggregation to analyze Jorgenson's[10] growth of gross output dealt with evidence of increasing returns at industry level. It also tested Fabricant's law and whether capital was special in Romerian[11] sense of raising externalities. It did not trace regional dispersal of industries abroad.

7- Ahluwalia' Isher Judge -'Productivity and Growth in Indian Manufacturing'-Oxford University Press-Delhi (1987).

8- Dhananjayan R.S. and N. Sasikala Devi -'TFP in Indian Manufacturing: 1973-93' in ***Productivity***-Vol.-39, no-2, July-Sept-1998, p-310-320.

9- Nicholas Oulton and Mary Mahoney's work on 'Productivity and Growth-A Study of British Industry-1954-86.***Occasional Papers-XLVI-National Institute of Social and Economic Research***, 1994. 10-Jorgenson D.W.-'Econometric Methods for modelling producer's behavior' in Griliches, Z and Intriligator, M.D. (ed.)-***Handbook of Econometrics***, ***Vol. III***-Amsterdam, North Holland. 1986. 11- Romer P. –'Increasing returns and long run growth'- ***Journal of Political Economy***, Vol.94, 1986- pp.1002-37.

Mehta S.S. (1974) [12] studied technological change in large-scale Indian industries from 1953-70 based on ASI census data. Till 1965, Indian industry expanded at a very high rate. The annual growth rates rose per annum. Industries studied by him also showed high rates of 6-7%. But the main source of output growth was due to increased physical inputs and the role of technical change was minimal. Regional dispersal of Indian Industries was not analyzed.

. Somayajulu V. V. N. studies on ‘Industrial Development of Andhra Pradesh: 1956-80 (1994) [13] examined the structural parameters of Partial and Total Factor Productivity for industrial development. It analyzed at length the regional dispersal of industries at sub-regional district wise level and probed intensively the institutional constraints and how to overcome them for a more effective and comprehensive industrial development at all levels: national level and at a sub-national level of AP State economy. But causal linkages between dispersal and growth, TFP, etc. were not established.

There are many other studies [as in the Major comprehensive Review in Chapter2] but regional dispersal measures, issues and Policy direction for the best regionally balanced industrial development were hardly analyzed as to trace causal link relations with growth, productivity (TFP and Partial), Returns to Scale, factor intensity, etc.

12- Mehta S.S- ***Productivity and Production Functions and Technical Change***- A Survey of Some Indian Industries, Concept Publishing House, 1974. 1980-pp-10-20.

13-Somayajulu V. V.N.- (1994) Industrial Development of Andhra Pradesh- ***ICSSR Sponsored Study***- University of Hyderabad.

1.6 Problem-Setting for the Current Study:

Studies relating to productivity and growth of Indian industries did not pin down causal and verifiable factors for economic weaknesses of industrial stagnation, recovery, growth, sluggishness and vicissitudes that manifested from time to time. No studies have been addressed to bring out an integrated industrial strategy, approach and policy across national, and inter-regional sectors and industrial development leading to regional dispersal of industrial growth in all states/UT of All India. The cited research gaps (Section 1.5) motivated to measure and relate growth, returns to scale, partial productivity measures, TFP measures and regional dispersal at national and state levels and trace causal relations between them in a framework of inter-relations between productivity, growth and dispersal measures as to test results and deduce policy guidelines as distinct contributions to industrial development studies in India. This current study also distinguished small states and UT from large states vis-a vis All India industries in the regional dispersal analysis.

Industrial growth and dispersal measures at 10-year and 40year periods coverage reflecting different stages of industrial development of India had not been attempted in earlier studies. This study contributed to explain the causal factors for distinct periods analysis and tests whether size of states yielded distinct results of regional dispersal of industries caused by the relevant factors over time 1959-95. Such an integrated study of industrial development could provide new policy perspectives and future directions of research.

1.7 Data:

Data classification problems, have been considered for adjustments on classification or coverage of units (wherever needed to) as to make comparable data from different sources, viz, CMI 1956-57, SSMI-1958, Statistical Abstracts from 1956-1971, ASI 1959 onwards and classification of 1970 NIC, 1987 NIC and 1998 NIC and then finally (Chapter3) bringing out 3-digit and 4-digit ASI or NIC data in CMI and SSMI industries in a NIC-1987 framework. However, state level data was not available for 1956-58 at 2-digit level of aggregation and not considered.

1.8 Chapterization:

The First Chapter deals with Introduction to the Thesis, Objectives, Hypotheses, Research Questions, Research Gaps, Importance and Relevance of the Study that contributed to knowledge.

The Second Chapter deals with deals with Literature Review revealing Research Gaps traced for the purposes of fulfillment of the Thesis' objectives.

The Third Chapter deals with Analytical Framework, Methodology of Analysis including Sources of Data and Adjustments.

The Fourth Chapter deals with Productivity Analysis of TFP Growth, Measures of Kendrick, Domar and Solow. Further, regressions of TFPs on K/L to measure contributions of capital-intensity to TFP growth are done. Analysis of size variables and structural ratios, their growth, partial and total factor productivities along-with Cobb Douglas production function estimates of output elasticities of L and K for each industry, factor-intensity, etc. for 2-digit (NIC-87) industries over 4decades were carried out. Whether growth, partial and total factor productivity measures move in tandem or in opposite directions were assessed as to reveal the causation mechanisms and linkages between productivity, factor intensity and growth in each industry.

The Fifth Chapter deals with Measures of Regional Dispersal of Indian Industries in All states and union territories together and separately for each of (i) large states and (ii) smaller states and UT as to assess their distinct region size effects on industrial development analysis. Barring Assam, all Northeastern states and Delhi were put in the third category. Sikkim, Arunachal Pradesh were omitted in the analysis for want of data. Herfindahl-Hirshman Index and Coefficient of Variation measures were used to analyze regional dispersal of size variables and structural ratios of industries to assess the extent and depth of industrialization and regional dispersal in India and to provide inputs for regional policy thereof.

The Sixth Chapter attempts a Graphical Presentation of Long-term Trends of regional dispersal measures for each of the 5 Variables and Structural Ratios of the 2-digit Industries to find out which Industries' satisfy Williamson Hypothesis.

The Seventh Chapter deals with the Causal Links between productivity, growth and dispersal over 40 and 10year time periods. This is to assess whether Total Factor Productivity, Partial factor Productivities have been causal factors for growth and whether K/L contributes to productivity and in turn to regional dispersal of industries.

The Eighth Chapter deals with the Major Findings and Policy Guidelines.

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Chapter 2

Review of Literature

2.1 Introduction:

This Chapter 2 reviews the literature of studies dealing with Partial and Total Factor Productivity, Factor Intensity, Growth and Regional Concentration and Dispersal of Industries and Inter-relationships between those concepts and measurements in theory and practice of India's industrialization. Similar studies relating to international comparisons with other countries' industrialization and micro-level foreign country case studies are also cited in the Review; that provided similar or divergent relationships leading to a few hypotheses for further empirical testing. This Review is also intended to trace research gaps as to fetch requisite hypotheses, or research questions. The Review is neither necessarily a full comprehensive survey nor claims to be a more refined or improved classification of themes based studies survey; but is intended for the cited purpose of examining the studies for causal relationships of growth, productivity and dispersal of the variables to trace research gaps for further works as not done in earlier studies. Hence, the Chapter is divided into following sections: Section 2.2 deals with initially those Studies dealing with International Comparison and Individual Foreign Country Case Studies. Section 2.3 dwells upon a few Major Studies dealing with Indian Industries' growth, productivity, dispersal performance, etc. Section 2.4 cites Studies focussing on discussion of relevant theoretical/technical and empirical verification issues dealing with Returns to Scale, Capital Intensity (K/L), Partial Productivity of Factors, Total Factor Productivity and Growth during long period and Period Wise Analysis till the Pre Reforms Period. Section 2.5 deals with specifically those studies on Growth, Industrial Development and Regional Dispersal of Indian Industries. Section 2.6 isolates the Research Gaps learnt from the Review of Literature cited above for further investigation of Indian Industries at national and sub-national levels with the experience of Post Reform Phase of Indian Industrialization.

To cite an important Themes- based Review works of Indian industries' studies, Somayajulu V.V.N. and Jacob George[1] (1983) reviewed earlier, similar Research works on Indian Industries' economic issues and contribution of the studies to the themes under the current Review quoting authors' works. They also included production function studies in India because they can be distinguished by distinct objectives/ themes, type of production function used, choice of variables, data used, etc. Such an improved classification adopted takes into account: 1- time series, cross section and pooled data studies; 2- state level and all India Industry studies, 3- micro-macro studies, where size and cluster of firms and industries define choice of variables, returns to scale, capital intensity, TFP measurements, sources of growth, etc. Later in 1990s, he estimated production function parameters in a major study of Andhra Pradesh Industries' development and relevant TFP and actual growth rates to trace inter-relations between sources of growth and development in AP industries, 1956-80.

The Classification undertaken in this Survey of Literature follows a chronological order of publication of studies under the themes in Respective Sections concerned.

1-Somayajulu VVN and George Jacob in 'Production Function Studies of Indian Industries: A Survey' in ***Artha Vijnana***, V-25, N-4, Dec 1983, pp-402-418.

2.2 International Studies:

Ishaq Nadiri[2] (1970) in 'Some Approaches to the Theory and Measurement of TFP: A Survey' in - focuses on some basic hypotheses and empirical evidences but refrains from giving any conclusive answers regarding measurement and determinants. His Survey paper is limited to determinants of TFP in USA industry. He shows that Solow's TFP measure is similar to Kendrick's TFP proportional to changes in quantities of inputs and output given a production type of Cobb-Douglas type, characterized by Hick's neutral technological progress. He discusses the usage of value-added data, as to measure output on assumption that ratio of raw materials to total output remains constant[3] (Domar.-1963). Nadiri's evidence suggests that the cited ratio was neither constant for the whole economy nor for the individual industries. It declined due to improvements in technology, better inventory management, substitution of both raw materials and primary inputs. Gordon (1969) [4] viewed that omission of materials that influence production relations often leads to a positive bias in estimates of returns to scale and affects elasticity of substitution between L and K.

2-M. Ishaq Nadiri**-** 'Some approaches to the Theory and Measurement of TFP'- A Survey- ***Journal of Economic Literature***, Vol.-VIII-***American Economic Association***, Pennyslyvania-1970-p-1137-1177.

3 - Domar Evsey- 'On Total productivity and All That', ***Journal of Political Economy***, Dec, 1962.

4- Gordon R J- '$45 Billion of US Private Investment has been mis-laid'-***Amer. Econ. Rev***. 59 (3), June 1969, pp. 221-238.

Irving Kravis (1976) [5] made a productivity comparison across countries to throw some light on causes of productivity differentials and to explain international differences in per capita GDP. Industry-wise comparisons have been made in terms of labor productivities. He did not pursue the industrial pattern of international differences in productivity as the industrial pattern differences were not significant. But Metals, Machinery and Chemicals revealed large productivity gaps in UK-USA comparative study Food Beverage, Tobacco, Apparel, Nonmetallic showed less gaps in productivity measurements.

Renuka Mahadevan (2002) [6] examined Australian 2-digit manufacturing for 1968-95. It decomposed TFP into technical progress and technical efficiency. And showed that trade liberalization has a positive effect on technical progress but no significant gains in technical efficiency. She found that in textile clothing, footwear and leather, L- intensity was the most but with the lowest wage rates and lowest TP and TFP growth compared to other industries. Further, government protection led to more fall in productivity. Transport showed greater TP than textiles but there was scope for better use of technology. Petroleum, Coal and Chemicals were most K intensive but there were little gain from technical efficiency because these industries faced minimal competitive imports and catered to domestic demand.

5-Kravis Irving ‘Survey of International Comparisons of Productivity’ in ***The Economic Journal***, No-86; March 1976; pp-1-44.

6-Mahadevan Renuka-‘Trade Liberalization and Productivity growth in Australian Manufacturing Industries’-***Australian Economic Journal***- Vol-30, No-2 June-2002-p.170-18.

Krishna K. L. (1992) [7] estimated a meta- production function as the envelope of all the efficient input-output points, for international comparisons. The difference between the observed and estimated growth rates of output [using the estimated coefficients] was the residual for the measure of TFP growth. It showed that relative sectoral growth rates of productivity were the important determinants of structural transformation in the economy. He reviewed some recent productivity studies with focus on TFPG. He compared TFPG in India versus South Asia and East Asia and assessed contribution of education to output growth. Then he discussed agricultural productivity, railways sector productivity and inter-state productivity differences, reviewed income convergence hypothesis and three sets of productivity measures for Andhra Pradhesh. TFP measurement was undertaken by using flexible functional forms of Production Function (PF) such as translog rather than restrictive types of Cobb-Douglas (CD) and Constant Elasticity of Substitution (CES).

First, Dougherty and Jorgenson (1998) [7] G-7 results are compared with Wolff (1991) [8]. In DJ and Wolff there is initial similarity in TFP levels but over time DJ index varies much. This is because p.f. of DJ allowed substitution possibilities at a much finer level along with data differences. In second part, TFP results are presented for 96 countries presented by Hall and Jones [9] and by Islam-1995. As regards 2nd set there are similarities at the bottom of the list than at the top but Islam index is more bottom heavy than H-J index [10]. The difference in conclusion is due to difference in methodology and data.

Macro Studies showed that the TFP measures used to analyze issues of technological diffusion and convergence and the different approaches to TFP comparison have important roles for purposes of formulation of policy guidelines.

7-Krishna K. L. (1992) booklet “**What do we learn from productivity studies**?” in his *Presidential Address to the Tenth Annual Conference to AP Economic Association in Andhra University*, Waltair, 8-9 February, 1992.

8-Dougherty C. and Jorgenson D.W.- International Comparison of Sources of Growth, ***American Economic Review (AER***)-Vol.86-May 1996- pp-25-29. 9-Wolff E.N. and Dollar D- Capital Intensity and TFP Convergence in Manufacturing-1963-1985 in Baumol WJ, Nelson W.W. and Wolff E.N ed- ***Convergence to Productivity-Cross National Studies and Historical Evidence***-New York, Oxford University Press, 1994.

10- Hall and Jones –Levels of Economic Activity Across Countries- ***American Economic Review (AER)***-Vol.87-1996-7-pp: 173-4.

Islam Nazrul (1999) [11] makes a review of three main approaches to TFP analysis for international comparisons. They are 1- time series growth accounting (absolute and relative) approach of Kendrick, Denison (1967) [12], Jorgenson, etc. The absolute has been used by Kravis (1976) [13] and Nadiri (972) [14]. Jorgenson and Nishimizu (1978) initiated the relative form of time series approach to international TFP comparison.

Jorgenson distinguished between quality and quantity of inputs. Christensen, Cummings and Jorgenson (1981) [15] extended it to 9 countries and used the translog production function. This function allowed an expression for difference in TFP levels. But before conclusions about technological differences from TFP results can be drawn, it is necessary to decompose TFP into its different components. For Hall and Jones –1996, 1997, differencing is done in direction of cross section of countries but this depends on the way the countries are ordered.

3- Islam's Panel approach seeks better explanation of cross-country growth differentiation expression in a level equation form of Cobb Douglas Production Function (C-d p. f.) A_0 estimation is controlled well by Panel Approach. There is difference in scope of results produced by time series approach, cross section and panel regression. The results are presented in two formats.

11-Islam Nazrul- 'International Comparisons of TFP- A Review'-***Review of Income and Wealth***, Series 45, December1999-N-4.

12- Denison E- why Growth Rates Differ- ***The Brookings Institution-Washington*** DC-1967.

13-Kravis- op.cit.

14- Nadiri Ishaq M- Some Approaches to the Measurement of TFP-A Survey**-** ***Journal of Economic Literature***-1970.

15-Christensen L, Cummings D, Jorgenson D- ***New Developments in Productivity Measurements and Analysis in Kendrick J.W. and Vaccara B*** *(ed.)* ***-Studies in Income and Wealth-***Vol-41**-**University of Chicago Press-1980.

Blakemore Arthur and Schlagenhauf Don (1983) [16] addressed the issue of switching regressions in the context of the USA productivity slowdown since 1950. A comparison of structural stability of these functional forms through Quandt's (1960) Most Likelihood Estimate (MLE) for testing null hypothesis that no regime switches have occurred was done. This was against the alternative that a change has occurred at unknown observation z *. In all three trends, when a simple linear time trend is utilized under assumption of single switch, ML occurs in 1973 II. This supports the opinion that a structural break occurred in US in 1973. But test for two switches is not definitive. This article was also important because it could enable comparison of possibly gradual productivity slowdown on global scale.

Power Laura (1998) [17] examines the relationship between productivity, investment and plant age for 14000 plants in USA manufacturing of 1972-88. Growth in productivity is systematically correlated with plant size in employment but there is no overall relationship between investment and productivity or productivity growth. In chemical industry, investment age coefficient is significant across plant regression but plant age is not. Fixed effects (accounts for cross plant and within plant variations and effects) and plant heterogeneity are more important determinants of observable productivity patterns than fixed costs of capital reallocation.

16-Blakemore and Schlagenhof Don- 'Estimation of the trend rate of growth of productivity' in ***Applied Economics***, 1983, 15, 807-814. Quandt's (1960)-Tests of hypothesis that a linear regression obeys two separate regimes, ***Journal of American Statistical Association***, 55, 324- 30.

17-Power Laura (1998) in 'Missing Link: Technology, Investment and Productivity' in ***Review of Economics and Statistics***, Vol-80, 1998- p-1300-312. She explains the weak link between investment and productivity saying that high productivity is not the motive for rise in investment.

Hiau Looi Kee (2001) [18] provided some theoretical underpinnings of the issue of productivity growth in the context of East Asian NIC growth. 1-The endogenous growth theory stresses the role of productivity growth. Lucas[19] (1988) introduces the effect of trade on productivity growth through a learning-by-doing mechanism. But Young (1992) [20] using growth accounting techniques inferred there is no sign of productivity growth in Singapore. Krugman (1994) [21] claimed that growth was input-driven. 2-This second school led by Findlay (1996) [22] and Ventura (1997) [23] showed that in a general equilibrium setting, a small open economy can sustain high growth through Rybczynski effects of factor accumulation.

18-Hiau Looi Kee-***Policy Research Working Paper 2702***- 'Productivity versus Endowments-A Study of Singapore's Sectoral Growth-1974-92' - ***World Bank Development Research Group Trade-*** Nov-2001. 19- Lucas-'On the Mechanics of Economic Development'- ***Journal of Monetary Economic****s*, Vol.-22- 1988, pp-3-42. 20-Alwyn Young- 'A tale of Two Cities: Factor Accumulation and Technical Change in Hong Kong and Singapore' ***NBER Macroeconomics Annua****l*-1992-pp-13-53. & Young A.- 'The Tyranny of Numbers-Confronting the statistical Realities of East Asian Growth Experience'-***Quaterly Journal of Economic****s*-Vol.-110, no-3, 1995, p-641-668. 21-Paul Krugman- 'The Myth of Asian Miracle'- ***Foreign Affairs***, Vol.-73, No-6, 1994, pp-62-78.

22-Findlay Ronald - Modeling Global Interdependence: Centers, Peripheries and Frontiers' ***American Economic Review (AER)***-86, -1996 No-2, pp-47-51. 23-Jaume Ventura- Growth and Interdependence- ***The Quarterly Journal of Economics* (*QJE*)**- Vol.-112, No-1, 1997, pp-57-84.

In Singapore, factor endowments accumulation plays a big role in many industries. Whereas in electronics factor productivity is the driving factor, in primary products industry both are equally important. Given nearly 60% of value- added of manufacturing is generated in the electronics industry and primary products industry, the role of productivity is as important as factor endowments in estimations of translog revenue function for a panel of 7 industries in 19 years from 1974-1992. Under assumptions of Constant Returns to Scale (CRS) and perfect competition the growth rate of TFP equals actual productivity growth. Growth of unskilled labor benefits rubber and wood industry. But primary products industry and manufacturing are skilled L intensive. Rybczynski elasticities measure growth of output due to growth of factor endowments in an economy. Since Capital (K) is intensively used in chemicals, electronics, machinery, petroleum and misc., where land and buildings are used intensively, productivity is a big factor of growth. For contributions of productivity is constructed as ratio of estimated effect of productivity to the total estimated effects of productivity, factor endowments, prices and fixed effect. Thus contributions of productivity, factor endowments prices and fixed effect are normalized such that the sum of the contributions equals to 100 %. Thus 46% of the value- added of manufacturing sector derives from an industry that relies most heavily on productivity as a source of growth. 35% of total value- added of sector is originated from industries that are driven from factor endowments.

2.3 Selected Studies of Indian Industries with the Same Inter-Relations Frame:

Padma Desai (1969) [24] related study of industrial growth in context of export demand, domestic final demand, import substitution and intermediate demand at current prices. Shares in Gross Value Added and in gross output at market price and factor cost declined over 1951-63 but GVA of investment goods rose and GVA in raw material and intermediate category had constant shares of 35-40%. In 1957-63, metals and chemicals (intermediate category) with large investment had started yielding outputs. Import substitution in 4 periods accounted for 5-9% of additional output.

S. S. Mehta (1974) [25] in 'Productivity, Production Function and Technical Change- A survey of Some Indian Industries' measures TFP of technological progress in 27 large scale Indian Industries during 1953-65 and examines trends in productivity till 1970 in the neoclassical frame. He uses data from census sector and adjusts CMI with ASI data.

Trends in technical progress reveal diversity among industries. Labor productivity has increased significantly in most industries but K-productivity has not. K-intensity explains growth in L-productivity in cotton textiles, ceramics, tanning, sewing machines, etc. The rate of technological change in the growth process of Indian industries was not very significant. The components of technological change that seems to have affected the growth process are K-intensity and factor substitution. In 3year rolling plan period 1966-68, rate of growth in industrial sector decreased to 1.6 % p.a. which increased slightly in 1969-70.

Vijay Bhasin and Vijay Seth (1980) [26] estimated CD and CES production functions for 27 3-digit and 4-digit major Indian manufacturing industries, commensurate with Dadi for 1950-65.

24-Desai Padma-'Growth and Structural Change in Indian Manufacturing Sector: 1951-1963 in ***Indian Economic Journal*** (IEJ)-Vol-XVII, No-2, Oct- Dec-1969.

25-Mehta S. S-(1974) [24] in 'Productivity, Production Function and Technical Change- A Survey of Some Indian Industries'.***Concept Publishing House***, 1974.

26-Vijay Bhasin and Vijay Seth (1980)'Estimation of Production Functions for Indian manufacturing Industries'-Jan 1980, ***Indian Journal of Industrial Relations***, No-3, Vol.15.

Brahmananda (1982) [27] deals with the productivity issue for the Indian economy, a sectoral perspective from classical, neoclassical and empirical points of view and presents a theory of productivity change suited to Indian industries considering the relevance of international productivity experience and its relevance to India. He also deals with controversies on development strategies from the productivity angle and so deals with allocation of factor quantities, relevance of CRS/LDR, disparities in wage ratios at sectoral and temporal levels, ratios of K/O, surplus/K, and the performances of private/public sectors.

He notes that the falling productivity trend is reflected in most commodity sectors and it has moved pari passu with the falling surplus/K ratio. No correlation was noticed between index of F-quantity change and index of TFP change. Sectors where K/O ratio was high showed more factor quantity accumulation, so it was no wonder that incremental K/O ratio rose very high in a short time. The productivity experience of developed countries does not show reversal of productivity index, unlike the case of India. Also, vis-à-vis them, India showed less concern with employment growth, the latter being less than population growth.

Goldar (1986) [28] estimated Cobb Douglas and translog production functions for large scale registered manufacturing from 1959-1979. His estimates indicate a significantly positive but low growth of 1.3% p.a. in TFP in Indian Industry. This was low compared to rate of growth in industrial output; similarly low in comparison to similar estimates of other underdeveloped countries. The statistical analysis indicates a strong positive relationship between output growth and productivity growth that is consistent with evidence of other countries. TFP in some modern industries like Basic Metals, Chemicals, Petroleum and Rubber is negative while many traditional industries showed positive growth.

27-Brahmananda P.R.- '***Productivity of the Indian Economy- Rising Inputs or Falling Outputs***' (1982).

28-Goldar B.N.-***Growth and Productivity in Indian Industries***-OUP-1995

The objective was whether meaningful estimates could be obtained for returns to scale, substitution, distribution, efficiency parameters. They observed that: 1-there are inter-industry differences in rate of growth of technical change; 2- there is less scope for factor substitution and the elasticity of substitution is less than unity in most of industries 3- CES seems more appropriate specification for most Indian indsutries4- most industries experienced decreasing returns to scale and 5- there are inter-industry differences in the pattern of income distribution among factors of production. CD is a better method in case of time trend with biscuit making and nonferrous metals. But ceramics, bicycles and electric lamps CD is better without time trend but CES is better with time trend in these cases. Choice between CD and CES varies from industry to industry.

K L Krishna's article (1987) [29] reviewed the trends in industrial production and productivity since 1950 to 1986. Industrial output grew 6- fold and average annual rate of growth works out to be 5.5% within these 35 years. Within manufacturing, the organized sector grew at a higher rate than unorganized sector. So growth in industrial employment lagged behind output growth. Traditional industries show better performance than new industries in TFP growth. He points out 2 unsettled issues. They are:(1) - Available estimates of TFP growth have to be reconciled. (2)- Sources of TFP growth have to be analyzed.

J. Ahluwalia's (1995) [30] 'Productivity and Growth in Indian Manufacturing' analyzed productivity and "Industrial Growth in India- Stagnation since the mid-sixties' analyzed the trends in industrial growth and productivity across 20 two-digit industries and identified the factors for persistent industrial stagnation since the mid 60s. It revealed that a slowdown in growth of heavy industries and low growth in other industries. This observation was caused by low productivity performance in industries due to 4 factors that contributed to industrial stagnation.

29-K L Krishna's article- ***'Industrial Growth and Productivity in India'*** in Professor Brahmananda's book '*The Development Process of the Indian Economy*'-1987.

30-Ahluwalia I.J.-. 'Productivity and Growth in Indian Manufacturing'-OUP-1995.

They are: 1- slow growth in agricultural incomes and their effect in limiting demand for industrial goods, and in limiting supply of materials, power, etc; and 2- slow down in infrastructure investment, 3- poor management of infrastructure sector, 4- industrial policy framework impacting on a high cost industrial framework. She highlights the deleterious effects of industrial policy regime in 1970s and cites beneficial effects of policy liberalization since mid-1980 when there was a break in manufacturing productivity mid-80s followed by New Economic Policies, reforms in industrial and trade policy.

Balakrishnan and Pushpangadan (1994) [31] argued in favor of a separate deflation of output and inputs as components of value added by their respective price indices. This method was critical enough to reverse Ahluwalia's conclusions of a 'turnaround in productivity growth'.

J. Mohan Rao (1996) [32] deals with method of growth accounting and econometric identification of the production function at any level of aggregation in the first article in 'Special Article Series'. He addresses critical issues of correspondence between theoretical measures and the indicators to measure it. It shows empirical relevance of B-P's revisions. They argue B-P procedure is also susceptible to bias but can be bias free through an alternative procedure. Secondly, when non-competitive conditions prevail a return to capital formation modifies bias in conventional productivity measure based on output or value added.

Pravin Krishna and Devashish Mitra (1998) [33] investigate effects of trade liberalization after 1991 on productivity. They use an extended Hall methodology that corrects estimated TFP for Solow biases. Using firm level data (1986-93-CMIE data) from four industries electrical, non-electrical, electronics (3-6%), and transport and allowing for changing returns to scale they find some evidence of increase in growth rate of productivity-3-6% in first 3 industries.

28-Balakrishnan and Pushpangadan-'TFP Growth in Manufacturing Industry- A Fresh Look- ***Economic and Political Weekly (EPW)***, March-1994.

32-J. Mohan Rao- in 'Manufacturing Productivity Growth- Method and Measurement**.** ***Economic and Political Weekly (EPW)***, Vol.-XXXI- No-44, Nov-2, 1996.

33-Pravin Krishna and Devashish Mitra (1998)'Trade Liberalization, market discipline and productivity Growth: New Evidence from India' in ***Journal of Development Economics***, Vol-56, pp: 447-462).

This happens through increased competition as seen in significant reductions in price marginal cost markups in post 1991 period. The traditional X-efficiency argument is invoked to justify these increases. Returns to scale got reduced probably because firms may be operating at smaller scale prior to reforms.

2.4 Theoretical and Technical Issues emerging from Productivity Functions, Growth, Productivities and Dispersal of Industries:

2.4.1 Scale Economies and Technical Progress:

Lakhwinder Singh and K C Singhal (1986) [33] investigates economies of scale and technical change and to locate sources of growth of Punjab large manufacturing for the period 1967-80 using ASI Census sector data. Capital (K) coefficient is found to be very small and is not significant for large manufacturing sector. So main source of growth is Labor (L). Basic metals and alloys industry registered high Capital (K) coefficient. But when a time trend as a proxy to Technical Progress (TP) was included, capital coefficient showed negative values. Neutral TP does not hold. While returns to scale was estimated to show increasing to scale. Electricity has a positive but insignificant coefficient. L coefficient is negative and significant in food products showing decreasing returns to scale. In cotton textiles, basic metals and transport, L-coefficient is negative and insignificant. However, only cotton textile, basic metals, transport and electricity reveal constant returns to scale. Final conclusion is large scale manufacturing shows constant returns. So output growth has been achieved through either one of factor inputs and not through returns to scale or TP. If this pattern and trend are repeated, then every increase in output would mean a greater strain in use of factors and resources and a proportionately higher dose of I is required for every additional unit of output.

34-Lakhwinder Singh and K C Singhal -‘Economies of Scale and Technical Change’ in ***Productivity-*** 1986- XXVII, 1, 55-60.

What is needed is increasing efficiency of resources as to improve returns to scale and not greater K/L unless the increasing K/L and resources combination improves Technical Progress (TP).

Agarwal A L (1986) [35] estimated output elasticity of inputs, in turn their marginal productivities, (for example a^α(Q/K)), shares in total output (α/Sum of coefficients $=\alpha+\beta+\gamma$), where a+b+c indicates returns to scale (S) , being increasing (S>1), decreasing (S<1)or constant (S=1) with gamma=1 (unitary elasticity of substitution) for estimated CDPF to 20 industries, with 7 industries of 1967-71 and rest 13 of 1975-80. In 1967-71, some estimated coefficients were negative indicating that increase in input use decreases output.

To overcome problems of multi-collinearity and other econometric problems, pooling of cross section and time series data was done. Regression coefficients computed simultaneously and/or due to fitting regression equations separately. In 1967-71 some estimated coefficients were negative that showed that increase in input use decreases output indicating vegetable and animal oil and fat, cement, etc. at 3-digit level. The estimated coefficients were positive for all 7 industries at 3-digit level. The coefficients of raw materials were positive in all industries but relatively the lowest in Repairs activity. Returns to scale was greater than 1 in Chemicals (IN31) and Transport (IN3). The efficiency parameter ‘n’ was 3.4946. In 1975-80, K-coefficient was negative in jewellery (IN38) and Water Supply (IN42) while being positive for 5 industries. In 1975-80, MP_L was positive in 5 industries of 1975-80 period, implying all 20 industries turned out to be raw material oriented.

Edward Wolff (1991) [36] found that K/L converged over long period though the process was much stronger after 1960. Lowering down of productivity convergence was associated with slowing down of K/L growth. The ratio of TFP to L-productivity growth is a rough measure of contribution of technical change to L-productivity growth. This was 0.57 and the remaining portion was attributable to capital deepening.

34-Agarwal A L- ‘On estimation of Cobb Douglas Production Function in Selected Indian Industries’ *in* ***Artha Vijnana***, June 1986, V-28, N-2, 152-170.

35-Wolff Edward-‘Capital Formation and Productivity Convergence Over the Long Term’ in ***American Economic Review* (*AER*)-**Vol-81, June-Dec-1991, p-565-579.

Results showed that there is a direct correspondence by period between the degree of K/L catch-up and TFP convergence. This was the strongest in 1950-79 but divergent in 1938-50. Secondly, thee is a direct correspondence by period between TFP convergence and average growth in K/L. This was the highest in 1950-79.

Wolff's paper hypothesized that convergence in L-productivity was due to convergence of K/L over time among the 7 industrialized countries. A positive correlation between TFPG and growth rate of K/L is deducible from the arguments of interaction between capital accumulation and technological advance. This is explainable from embodiment effect, vintage effect, learning by doing, potential technological advance and Verdoorn-Kaldor effect whereby investment growth through demand growth leads to a favorable climate for investment and industrialization. In Wolff, results showed a positive correlation of 0.79 between rate of TFPG and K/L over 1880-1979. Results based on regression and vintage model are mixed but support the existence of interaction effect between technological advance and capital accumulation. Many authors like Wolff, showed concern in possible interaction between processes of K-deepening and technological diffusion. Wolff's hypothesis is that TFP catch up depends on K-intensity catch up. He presents evidence for USA in terms of positive correlation between TFP growth rate and K-intensity growth rate. Also, after controlling for initial differences in TFP level, he regresses TFP growth rate on initial level of TFP and K-intensity growth rate and finds a positive coefficient. This is an indication of positive influence of capital accumulation on TFP catch-up.

Upender M (1996) [36] estimated elasticity of L productivity to find out substitution possibilities of L for K for 1973-90. The proportionate change in L-productivity due to unit or small change in wage rate (W/L) is the measure of elasticity of substitution σ = 1/1+ ρ (where σ can take any value. σ >1 means higher substitution possibilities). Returns to scale is 0.8% and that shows Indian factory sector is subject to decreasing returns to scale. Results show that factory sector is K-intensive.

36-Upender M-'Elasticity of L-productivity in Indian Manufacturing' in ***Economic and Political Weekly (EPW)***, 25 May 1996.

Elasticity is >1 and so there is greater possibility of substitution of L for K. The elasticity of L productivity with respect to wage rate is more than one and so substitution possibilities are high.

Krishna Kumar P. (2000) [37] undertook a study for selected five industries (Textile products, Leather, Rubber, non-electrical and electrical machinery, Chemical) at two digit level for time period 1973-93. Net fixed capital stock for different years was estimated by making adjustments for new investment and depreciation for respective years. It was found out that majority of industries faced increasing returns to scale. Electrical and non-electrical show Decreasing Returns to Scale (DRS) but significant rate of TP was 3%. Leather faced Constant Returns to Scale (CRS) and TP was low at 0.0018. But for all the five industries rate of technical progress was positive and it had important contributions to value added.

Hasan Rana (2002) [38] uses panel data from 1976-87 on Indian manufacturing to determine the extent to which productivity is affected by both embodied (technology embodied in the capital goods that firms use) and disembodied technology (technical knowledge).

The productivity enhancing effects of new domestic capital goods however appear to be more broad-based. They are found to exist in a wide range of industries and not just the scientific or technology intensive ones as tends to be case for imported disembodied technology and imported capital goods. The analysis reveals that the productivity benefits of domestic capital goods appear to stem in least in part from the disembodied technologies imported by domestic capital goods producers.

Capital formation can exert two effects on L productivity. 1- by raising K/L ratio it will raise L-productivity even if there is no advance in technology use. 2- through interactions with technology advance K accumulation may be associated with gains in productivity over and above capital deepening.

37-Krishna Kumar P. (2000) (Ch-16-pp-264-271 titled ‘Returns to Scale and Technical Progress in Indian Manufacturing’ in book by VVN Somayajulu’s ***“Econometric Studies of Economic Reforms in India”*** published by Academic Foundation-2000.

38-Hasan Rana (2002)- ‘The impact of imported and domestic technologies on the productivity of firms: panel data evidence from Indian manufacturing firms’- ***Journal of Development Economics***-69-2002-pp. 23-49.

Sengupta D. N. (1999) [39] reviewed the process of growth in Indian manufacturing in 1980-90 through 12 three digit industries and examined the inter-linkages between growth and elements of productivity, demand, cost, prices, investment, employment, structural change and balance of commodity trade. Results showed that growth in the decade period was policy induced and that growth in consumer and non-consumer goods industries was demand induced growth that pulled up output of capital and intermediate goods. Productivity increased in response to output. After reaches 3.7%pa, productivity increased by 1.4% for every 1 % additional growth in output similar to I. J. Ahluwalia study (1991-p-131-40).

39-Sengupta D. N.-‘Indian Manufacturing Industry- Growth Episode of the Eighties’ in ***Economic and Political Weekly (EPW)***, May 29, 1999, pp-M-54-M62.

Section 2.5 Studies dealing with Industrial Growth and Dispersal:

V. Nath (1971) [39] reviewed policies relating to regional development in the Five-year Plans especially in relation to state levels of economic development and rates of economic growth. He confined the analysis to states due to almost little availability of data for lower level administrative-economic units. His conclusion was pertaining to agriculture growth and modernization, rather than industrial patterns. However, even there, the west and south states did rather well than the east and north-central states. He throws some light on industrial location and development of backward regions. Demands for additional resource allocations and special measures of relief of backwardness have come from an increasing number of backward regions.

But in the first 3 plans, despite ‘intentional’ roles given to infrastructures and social services, additional funds could not be provided. Financing was to be from state plans. In mineral resource belts, central investments wee made. But the backward regions of Bihar and UP, a total of 80 million people were in districts classified as being at the bottom or next level of development. These backward districts had 45% of total all-India population of such districts.

These two states contiguous with MP and Orissa is the ‘backward heart’ of India. UP had the lowest per capita state plan expenditure under the first 3 Plans. Demarcation of backward regions using uniform criteria is essential for objective assessment of the magnitude of the problem of backwardness to remove complaints of differential treatment. The need for transfer of financial responsibility arises from the inability of states to undertake effective action.

39- Nath V- ‘Regional Development Policies’, ***Economic and Political Weekly (EPW)***- Special Number July 1971,pp-1601-1608.

In his first article in EPW, Nath showed the ambivalence of planners on locational problems. While advocating industrial dispersal, the planners avoided advocating licensing power to be used for locational purposes (table 1 col-16 Regional development in Indian Planning). He noted that the most rapid development had taken place in the developed states of Maharastra, West Bengal and Gujarat. This was the case in 3rd and 4th plan periods. The flexibility due to new technological developments had made many industries footloose. It was noted that the large land requirements for assembly line production induced industries to seek locations in peripheral regions. But Maharastra had sought to prevent concentration of industries in Bombay and direct industrial growth to less developed regions through construction of estates and financial incentives. Need for a comprehensive policy for industrial location was stressed in the study.

M. L.Pandit's (1974) [40] paper throws a new dimension into the dispersal issue. He divides the growth effect to regional effect and compositional effect and concludes that correlation between regional effect and state's industrial growth rates show a positive and strong relationship while no relationship emerges in case of compositional effect in relation with states' growth rates. Out of 17 states taken for study, regional effect is positive for 11 states in all time periods. But one of his policy conclusions that only when full employment is attained in each state was efficient allocation of industries a viable strategy. The reason is industrial dispersal itself must fulfil the goal of full and productive employment.

50- Pandit M. L.- 'Industrial Income in the States-1960-69' ***(Indian Journal of Regional Science***, Vol-VI-No-2-1974-p-124-136. ("***Spatial variations in Rates of Industrial Development in India" for M. Phil degree*** at Center for Studies in Regional Development, Jawaharlal Nehru University).

Kelkar V. L. and Kumar R (1974) [41] showed that the sustained period of inward oriented industrialization was associated with high levels of concentration due to lack of medium range enterprises and a poorly developed SSI. The 1980s witnessed changes in industrial structure. Earlier, the metals related industries in north-eastern industrially underdeveloped regions dominated. But in 1980s, chemicals and consumer durables became engines of growth.

Somayajulu, V. V. N. (1980) [42] wrote a Resume of India's Industrialization for a century of 1879-1978 that identified reasons and facts for distribution of industrial trends. Industrial Stagnation and Industrial Recovery were covered during the Pre-Planning and Five-Year Plan Periods including the Rolling Plan Period.

He wrote that industrial output on 1960 base was 5.5% p.a. for a decade ending 1965-66, but later on pulled down to 0.2% in 1966-67, 0.5% in 1967-68 and a recovery of 6.2% in 1968-9. Cotton textiles showed lower growth than all industries taken together. Silk and synthetic fibers increased their output faster. Import substitution of synthetic fibers caused decline in cotton textiles. Bank rates were reduced from 6% to 5% to ease industrial investment.

41-Kellkar V. L. and Kumar R- Industrial growth in 1980s- Emerging policy issues- ***Economic and Political Weekly* (*EPW)*** January 27 pp-209-222) (1974)

42-Somayajulu V.V.N. –Industrial Development in India 1878-1978'***Productivity***', 1980-No-1, 1980, p-9-66.

Industries were allowed to diversify their output up to 25% of their licensed capacity without need to securing license. Tax incentives were provided in Central budget of 1968-69 to promote private investment and exports. But there was no increase in capital formation in private sector. Price index of raw materials rose after 1967 by 20.9%. Steel shortage was a bottleneck to engineering production Demand for rail wagons decreased. In 1968-70, food manufacture, leather, footwear, made up textile goods, transport equipment faced recession. Supply bottleneck was noticed in oilseeds, raw cotton, steel, non-ferrous metals, coal, cement.

Somayajulu (1974 and 1976) [43 & 44] Structural Changes and growth rates in industrial sectors are reinforcing to each other over plan periods that value added in modern industries received later and greater importance than in traditional industries Output of tobacco, petroleum, chemical, showed higher growth in Small Scale Sector than those in Large Scale Sector in 1961-65. But textiles, food industries, electricity generation led the resurgence after 1965-67 (Somayajulu, 1974, 1976).

Dinesh Awasthi (1982) [45] used various measures of inequalities such as Standard Deviation of Logarithms, Gini Coefficient, Theil's Inequality Index and H-H Index for all years between 1961-1978(except 1972) using ASI data for Fixed Capital, Employment, Value added. 1970-71 was taken as the base year and all the important states were covered. All indices showed reduction in inter-regional inequality though the trend was not smooth as in 1969 and 1978.

43-Somyajulu VVN-Structural Changes and Growth in Indian Industries –1946-1970, ***Asian Economic Review***, December-1974, Vol-17, No-1, 2,3.

44-Somayajulu V.V.N.- Measurement of Structural Changes in Small versus Large Industries, 1965-1975, ***Economic and Political Weekly (EPW)***, 1976.

45-Dinesh Awasthi- - 'Trends in regional Dispersal Inequalities in India 1961-1978'- *Anvesak*- Vol-19, Nos:1 and 2.

Uday Sekhar (1982) [46] examined trends in interstate distribution of industry in India during 1961-75 and determined whether disparities had been increasing over time or not. Comparing the ratios for 1976 he found that Maharastra, West Bengal, Gujarat, Tamil Nadu had above average manufacturing value added/Net Domestic Product (VAM/NDP). In 1961, these states along with Delhi but not

Tamil Nadu were more industrialized. During 1961-76, manufacturing sectors of other states have been growing at a faster pace relative to NDP and so a trend towards equalization of state VAM/NDP is noticed.

Between 1961-1969, decline was manifested in Orissa, Madhya Pradesh, Bihar, Karnatak due to heavy investment in K-intensive public sector. In unorganized sector too, Coefficient of Variation. showed a decline of 84% to 61% between 1969 and 1978.

Another major study of industrially lagging state of Andhra Pradesh during 1956-1970s (nearly two decades of Planning) emerges from an ICSSR sponsored study by V.V.N. Somayajulu[58].

The study examined technical parameters of industries through estimation of Production functions, TFP and regional dispersal in large through large versus small and recast those findings for testing the explanation of mid-sixties Indian Industrial retrogression. His study shed light on the institutional financing aspects of AP Industrial development. He made an economic evaluation of the role of APSFC, APIDC, APSSIDC, APIIC, All-India Financial Institutions, Role of Central and State Investment Subsidies.

46-Uday Sekhar -Trends in Interstate disparities in Industrial development in India 1961-1975- -***Indian Economic Journa****l*- Oct-Dec-1982 Vol30 No-2.

47-Somayajulu VVN- "**Industrial Development of Andhra Pradesh-1956-1980**"- ***ICSSR Sponsored Study***-1994. Of this, Industrial Stagnation and growth in Indian Industries of Andhra Pradesh, 1956-1985-Re-Examining Mid Sixties Explanations for India's Industrial retrogression, ***ARTHA VIJNANA***, Vol-13,pp-127-140. ***Strategies of Industrialization in Small scale and large Scale Industries of Andhra Pradesh***…" ***In Indian Economy in I-O Framework***. ***Regional dispersal of Industrial Incentives in Andhra Pradesh, 1982-1997. Production functions, TFP, growth and Employment Implications of Khadi and Village Industries, regional Diversification versus Convergence Hypothesis-retested for AP, Economic Evaluation of APSFC-PRAJNAN***.

Small-scale industries contributed better than large industries in AP State and in backward districts of AP to regional dispersal, employment generation and growth after 1970s prior to which period of two decades no industrialization took place. Large-scale industries in Metropolitan cities, hinterland picked up momentum of growth after 1980s. The fundings were supported by role of APSFC, APSIDC, APIIC and APIDC.

The study analyzed the trends in sanctions and disbursements of finances to different industrial activities of small, medium and large-scale industries and to what extent of regional dispersal those lendings and priorities were given by APSFC. Similarly, the role of APIDC in respect of above aspects along with the aspect of entrepreneurial development is discussed. Despite the drawback in data coverage, it discussed plan allocations, production performance and an evaluation of study of joint sector units in equity participation problems of marketing and raw material procurement by APSSIDC and other corporations and financial institutions were analyzed. Performance of APSSIDC depended on tact and alertness in co-ordination and in making the relevant Bodies understand the spirit of co-operation for small industry promotion, lack of co-ordination seems to be the cause of failure of APSSIDC. Despite the paucity of data, Industrial Estates (IE) and Industrial Development Areas (IDAs), their role for regional dispersal, occupancy ratios, voluntary loan contribution by APIIC along with suggestions for locational improvement were analyzed. Role of All India Financial Institutions, the scheme-wise sanction of IDBI and IFCI for AP industries in backward areas, advances on project financing scheme by providing equity, modernization, underwriting guarantees is noted. ICICI’s promotional and investment role and Commercial banks industry-wise and district wise credit allocation to help SSI’s and role of AP non- resident Indian Investment Corporation were also analyzed. Role of central and state investment subsidies for tribal development blocks and backward areas, industry-wise disbursement, was analyzed. A suggestion for all these explanation and studies was to prefer industries with higher regional linkages and its L-intensive-ness for generating employment in backward areas too and industrial capital and material linkages to be preferred for overall growth of industries in AP.

R Nagaraj (1994) [48] studied relationship between employment, capital intensity and wage rate for 1973-87 for 42 three-digit registered manufacturing industries. His point of departure was from Isher Ahluwalia's 1992 study (p-82-3) that identifies consumer non-durables as accounting for bulk of decline in employment with maximum increase in capital intensity and maximum increase in real wage rate in the relevant period.

Nagaraj differs in the explanation offered by Ahluwalia, Lucas and World Bank study. He believed that structural changes in favor of unregistered sector and also movement towards SSU within registered manufacturing were the cause of declining employment in registered factory sector.

Moreover, it postulated a compositional change in output towards L-intensive industries as overhang of employment in 1970s stagnation, restriction on fresh employment in large factories, contracting out and greater use of part time workers. Methodologically, in time series data of 42 three-digit industries, to minimize auto-correlation problems, the first difference in each series is correlated. In 9 of the 42 industries the postulated relationship is statistically valid with the expected sign for estimated coefficients.

But the results across the variants explored show lack of consistency with insignificant coefficient sign. Thus the results suggest that the relationship among the three variables is more complex than postulated.

48- Nagaraj R (1994) 'Employment and Wages in Manufacturing Industries- Trends, Hypothesis and Evidence' in Special Article in ***Economic and Political Weekly*** **(*EPW)***- Jan 22- 1994, p-177-186.

Anuradha and AVVSK Rao (1995) [49] showed that the process of industrialization was characterized by an inequality in its spatial distribution. Interstate disparities in relative terms tended to decline during 1971-86. Developed states experienced decline in their share of employment and productive capital while backward states showed increase. in Theil's index.while H-H Index showed a decline in value added, employment and value of output. Per capita productive capital, factory employment per thousand of population weighted and unweighted interstate CV also declined for all 15 states.

Jeemol Unni, N Lalitha and Uma Rani (2001) [50] analyzed trends in growth and efficiency in utilization of resources in Indian manufacturing before and after the reforms during 1978-95 with the break year at 1989-90. They gave a regional dimension to the repercussions of reforms by analyzing organized and unorganized manufacturing in Gujarat during the same period.

They concluded that growth, value added and capital increased after reforms and especially so in the consumer durable goods sub-sector in organized sector. However, Total Factor Productivity Growth (TFPG) in Indian organized and unorganized manufacture showed decline. Growth in unorganized sector peaked in 1978-85 but decreased later. The authors concluded that perhaps large organized sector is better equipped to deal with competitive conditions arising out of the reform process. The pattern of growth in Gujarat's both sectors were similar. Gujarat did better in terms of value added for both sectors than all India. Employment growth in both sectors at regional and national levels was higher. But employment growth in unorganized sector in Gujarat was higher than India for both periods; though in case of organized sector result was different. Growth in capital intensity (K/L) ratio was relatively high in both sectors at national and regional levels leading to a negative growth in K productivity in the entire period. In the reforms period there was a sharp increase in K intensity in both sectors at All India levels and Gujarat. But in reforms period K/L declined leading to increase in K productivity in Gujarat.

49-Anuradha and AVVSK Rao- 'An Analysis of Interstate Industrial Disparities in India 1970-71-1985-86'-***Indian Journal of Regional Science***, Vol.-27, 1995.

50-Jeemol Unni, N Lalitha and Uma Rani in a Special Article -'Economic Reforms and Productivity Trends in Indian Manufacturing', ***Economic and Political Weekly***, Oct-13, 2001.

However, TFPG in Gujarat for both sub-sectors was positive. Also basic and intermediate sub sectors grew rapidly in the reforms period. This was attributed to growth of physical infrastructure development in 1980s.

V. Surender (1986) [51] work on growth and dispersal took two points of time 1961 and 1978-79 and analyzed Location Quotient and Coefficient of Localization. His database is the three digit industries of ASI Census reports. Out of 21 industries, 11 were highly localised. Uneven distribution of industrial activities is ascribed to uneven distribution of productive resources and lack of cheap transportation facilities. Agro-based industries were located mostly in south and non-agro in Bihar, Maharastra, West Bengal and Union Territories. Localization Quotient showed wide dispersal. They are in electric light and power, non-ferrous basic, electrical machinery and industrial machinery. LQ of>1 is seen in transport and rubber. Basic and capital goods showed tendency towards backward locations. His hypothesis that the higher the growth of industries, higher the dispersal and vice versa was empirically verified. But cement and petrol also show high dispersion but low growth and so LQ studies are not deemed conclusive. Combined effects of initial concentration and growth of industry is significant at 18 degrees of freedom.

Rohit Desai (1986) [64] analyzed results over two points of time-1964 and 1980-81 using census level data. He wrote that the process of diversification has gained ground across states. He also related the level of diversification with economic development by estimating rank correlation coefficient between indices of urbanization, infrastructure, investment in mining, manufacturing, small-scale units at state level. State level industrial diversification was studied by analyzing state level coefficient of specialization by using employment data for organized manufacturing. His conclusion was that there was no significant change in spatial industrial diversification in 1981 over 1964. Majority of states showed specialization. But regional development indicators were positively related with spatial diversification.

51- V. Surender-‘***Indian Industries’***- BR Publishing Corporation in Ch-5- 1986.

52-Desai Rohit-Changing Pattern of Regional Industrial Diversification- A comparison over time –***Indian Journal of Regional science*** **(*IJRS)***-Vol.-18, N-1, 1986.

Jayadevan C M (1995) [53] analyzed interstate variations in the rates of growth of employment in organized industry as a whole and in 17 individual organized manufacturing industries in India during 1976-88 for 15 states and tried to explain causes of interstate variation in employment. He studied 195 three-digit industries. Large employment growth rate differentials across states were noticed due to disparity in the growth of real output. No significant impact of real wages per worker on the employment growth rate was noticed except in cotton textiles for 1976-77 and beverage, tobacco and nonmetallic mineral products for 1987-88. Interstate variations in value added growth rates are significantly explained by varying magnitudes in industrial disputes and consequent number of man-days lost in various states. Employment in organized industry can be promoted by removing labor market distortions.

K. Rana (1988) [54] writes of uneven development at inter-state level. There was centralization or concentration of industries till 1976 when Maharastra, Gujarat, West Bengal and Tamil Nadu contributed 57.37% of value added. ASI 1978-9 revealed the domination of developed states in industrialization. On the criteria of domestic consumption of electricity per capita, Punjab showed 29.8kwh followed by Maharastra at 28.4Kwh and Haryana at 19.9kwh but in HP it was 15.5Kwh in spite of fact that it was used for temperature regulation. In backward states, the most serious constraint on development was constraint of finance.

53-Jayadevan C M -of National Labor Institute, Noida**- Indian Journal of Regional Science *(IJRS)***-p-41-56,Vol-XXVII, Number-1&2-1995.

54-K. Rana in '***Industrialization of Hill States in India***' Deep and Deep Pub. -Chapter-VIII (1988).

Vijay Seth (1987) [55] used data on CMI-ASI from 1951-81 to test convergence hypothesis and interstate spatial pattern of industries. He used relative share of the region in total population as proxy for size of states. He used Hoover measure, Zelinsky-Fuch measure, Grossack's measure and the measure of changes in the significance of regions. These measures showed that process of industrialization was accompanied by inter-state convergence in India. Finally, it was pointed out that institutional and technological spread of agriculture is important for spread of industry.

Sunil Kumar (1999) [56] analyzed productivity variations across states and found that there is no convergence in Indian manufacturing in a regional context in the period 1969-94 using ASI factory sector data. The fall in total factor productivity (TFP) in industrially developed states may be due to obsolete capital aging infrastructure, deteriorating urban environment and failure to upgrade technology. But the deregulatory framework in 1980s helped impart positive effect on TFP growth at aggregate and regional levels except West Bengal and Orissa. Results also suggested that the government policy of balanced regional development has helped the lagging states in raising their manufacturing productivity.

55-Vijay Seth-'Industrialization in India- A Spatial Perspective'- ***Commonwealth Publications***, New Delhi-2-1987.

56-Sunil Kumar-'Inter-state Variations in Productivity in Indian Manufacturing Sector: A Translog Approach'-***Indian Journal of Regional Science (IJRS)***, Vol-XXXI, No-2, 1999-pp-82-94.

2. 6 Research gaps and Post Reform Phase:

Mohan Rao (1996) [57] made many methodological changes. His real productive capital is measured as a sum of working capital deflated by manufacturing WPI at 1960-61 prices and fixed capital at replacement values also at 1960-61 prices. He showed that the trend rate of growth of TFP was 2% for entire period. But it was high at5.5% in 1973-81 and –2.2% in 1981-93. The contribution of productivity growth to value added growth was 33% for 1973-93 but 52% for 1st period and –96% for the 2nd period.

Thus he differs form Ahluwalia's conclusions in that there is a turnaround in 1980s in the negative direction. But TFPD for Mohan Rao and Ahluwalia is same. Mohan Rao's TFPD shows movement from positive to zero growth. In the Indian manufacturing TFPG with double deflation showed less bias though this may not hold true in general.

Mohan Rao uses Gross Value Added to find out total productivity growth (TPG) for 1973-93. The results of aggregated manufacturing differ from earlier studies in that industrial performance in 1980s did not show improvement compared to 15 years before. Real value of output growth based on ASI data show growth rate of 6.9% pa for1973-93. But real value added growth rates are much different when this period is divided into two sub-periods though this is not the case in real value of output growth rate calculations.

Sandeep Kumar (1999) [58] confines his analysis to intra-state and inter-district analysis of industrial development and dispersal. Over the time period of study (1971-91) in 1988, only chemical product groups exceeded other major industry groups in terms of labor productivity and capital intensity. Agro-based industries showed increase in their share of total factory workers but the share of capital investment and value added declined. Size structure showed shift in favor of small and medium size industries in general (86% in 1988). Analysis of H-H and Theil's index showed upward trend in the concentration in value added over 1967-68. The author has also shed light on fiscal incentive structure and institutional financing both for backward and non-backward districts.

57-Mohan Rao- for 1973-93 - ***Economic and Political Weekly (EPW)***-Nov-2 1996.

58-Sandeep Kumar's published Ph.D. work on 'Regional Disparities in Industrial Development' (*Pub-**Classical Publishing Company***), New Delhi-15, 1999.

Sumit Majumdar (1999) [59] analyzed productivity trends in Indian Industry for 1950-93. Productivity is measured using a linear programming based technique called Data envelopment analysis (DEA). His results showed that in 1950s, industrial efficiency was relatively high; in the 1970s there are retrogression and in 1980s, patterns reversed to a great extent. But in 1990s efficiency peaked showing that reforms were working well.

Dhananjaya R. S. and Sasikala Devi, N. (1998) [60] provided and assessed behavioral characteristics of TFPG in an 18 2-digit inter-industrial framework to see how efficient use of technology accounts for rapid growth in certain categories than others. Kendrick, Solow and Divisia indices are estimated for 1973-94. While overall trends in TFP growth rates affect output expansion with lag of 1 or 2 years depending upon nature of policies adopted, Divisia index of TFP has yielded better rates of technical efficiency and so higher rates of output growth.

In 1980s, Divisia did nIot show better in any group vis a vis other periods. But in 1990s, Divisia showed higher results in two digit industry numbers such as 23—25-26 in traditional sector and 30-31- 32-33-35-36-37 in non-traditional sector. For overall case, Divisia showed higher in 32-38-23—36-25-35-30-31. But generally, TFP contributions to output growth have yielded low magnitudes though during inflationary spurts in mid 70s, late 80s and early 90s TFP showed higher magnitudes. expansion in the rest was higher in early 90s than previous periods. Only in 35 group, Solow indices showed higher than base year's unitary magnitude. Among 3 estimates, Divisia index recorded values greater than one in most years of study for all non-traditional categories. Kendrick index of TFPG showed higher rate of output expansion (>than base year value of 1) prevailing in 70s, 80s, 90s. w. r. t. 20-21, 25, 26, 38 industry groups. Using Solow, TFP in 70s was higher than 80s and 90s in all traditional categories except 20-21 and 29 groups. Non-traditional groups showed higher values in all except 35, 37.

59-Majumdar Sumit - 'Fall and Rise of Productivity in Indian Industry- Has Economic Liberalization Had an Impact?' in ***Economic and Political Weekly (EPW)***-1998-99 (p-M-46-M-53).

60-Dhananjaya R. S. and Sasikala Devi, N. -'Total Factor Productivity in Indian Manufacturing: 1973-93', ***Productivity Journal***, Vol-39, No-2, July-Sept 1998 pp-310-320.

Kaplinsky Raphael’s (1997) [61] paper reviews changing strategic perspectives from inward orientation towards a liberalized scenario (in two phases) and the consistent performance of the Industrial sector in post 1947 period. It concludes that given poor productivity performance, most studies that have been undertaken of Indian Industrialization have been macroeconomic in nature and that there has been a poor tradition of microeconomic research into the determinants of industrial competitiveness.

Some forms of industrial development especially those based on cheap labor are only sustainable with a depreciating exchange rate as countries engage in a competitive process of devaluation to lower dollar wage rates. This does not lead to income growth. So also is the case when production is performed behind closed doors. The border price value added in industry, i.e. value of industrial output, when calculated at the cost of imported equivalents, can be much lower than when it is computed at domestic prices and then converted into international units of account through exchange rate. Given India’s commitment to distribution concerns that has long been a central objective of industrial development. This poses challenges in balancing needs for sustained income growth, international competitiveness and equity in distribution that led to the policy framework towards 1- Development of heavy industries; 2-State to control monopolies; 3- Import substitution to be a key strategy4- promotion of SSI. 5-The trend towards opening of industry’s economy that requires change in pace and quality of industrial development. It is seen that competition in product markets is no more based on costs than on a combination of costs and product quality differentiation and innovation.

61-Kaplinsky, R-‘India’s Industrial Development: An Interpretative Survey’ ***World Development***, Vol-25, No-5, 1997, pp-681-694.

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The divergent nature of results from Studies of Mohan Rao, Snadeep Kumar, Sumit Majumdar, Dhananjaya and Sasikala is an incentive to probe further into the problem of Industrial Productivity to understand the causes thereof. TFP in Indian Industry in these above cited studies shows a rising trend. To Kaplinsky, lower TFP figures has not enabled researchers to develop a strong micro-economic foundation of productivity studies in India. While the differential TFP figures of many researchers on Indian Industries is an incentive to further probe into nature of TFP figures obtainable in Indian Industries, this thesis probes further into the possible links between productivity, growth and dispersal measures in Indian Industry that can be one of the foundations to develop a tradition of micro-economic research in productivity and growth in Indian Industry for fulfillment of objectives of regional equity in Indian Industry.

Chapter- 3

Materials and Methodology

3.1. Introduction:

Abramovitz Moses, a pioneer in the field of productivity growth measurement demonstrated Total Factor Productivity (TFP) to be one of the main sources of measurement of output growth[1], as to serve for economic efficiency leading to welfare. The objective of industrialization being growth with efficiency and/or productivity leading to regional equity, this Chapter deals with the requisite framework of anlytically sound Materials specification and Methodologies for demonstration of productivity-growth linkages. Such analytical framework and methodologies have to be verified empirically. This dissertation intends to establish and empirically test measures of Partial and Total Factor Productivity to establish links between productivities and of growth and then to trace linkage with measures of regional dispersal of Industries. Thus this Chapter provides an Analytical Framework, Specifications, Materials and Methodologies for tracing inter-relations among partial and total factor productivity, capital intensity, growth of output and regional dispersal of Industries. This Framework serves to use both cross-section data of states and time series data of industrially significant periods of anlysis (medium term of each decade and long term of four decades, 1956-95).

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[1]Abramovitz Moses: Welfare Quandaries and Productivity Concerns- Presidential Address delivered at the Ninety-third meeting of American Economic Association, September 6, 1980, Denver, Colorado-***American Economic Review***-March 1981, Vol.71, No.1-pp: 1-17.

A meaningful contribution is also expected from the TFP measures in the analysis of the role and rate of technological progress and in turn growth of Indian Manufacturing output resulting into regional industrial dispersal as to ensure equitable regional development towards rural backward regions.

This Chapter is divided into Four Sections as below: 1- Data- Bases, Materials and Measurement, Rationale for Formulae: 2- Adjustments Needed for and a Brief Review: 3- Classification, Aggregation and Adjustments and Data Limitations and Problems: 4- Analytical Framework for Growth and Regional Dispersal

3.2 Data- Base, Materials and Measurement, Rationale for Formulae Used:

Annual survey of Industries (ASI) for data availability from secondary sources are to compute annual Growth Rates, Partial and Total Factor Productivity ratios through estimation of Cobb Douglas (CD) production function for each of the 20 two-digit industries based on National Industrial Classification-1987 over 1956-95 and for decadal periods, such as 1956-65, 1966-75, 1976-85 and 1986-95. Monthly Statistics of Production of Selected Industries were also used to cross checking, whenever necessary, that include data and results of research studies of Scholars, Institutes and Planning Commission’s reports including those sponsored by Central and State governments. For State and Union Territory Dispersal analysis, ***ASI-1973-1997- Data republished by EPW Research Foundation, Mumbai (2002)*** was used to compute measures of Regional Dispersal. A Time Series Data of Annual Survey on Industries (1959-1971) [2] was also used for computing measures of Regional Dispersal.

2-Annual Survey on Industries (1959-1971) published by the ***Central Statistical Organization*** (CSO), Government of India (GOI), Kolkata.

Rationale for Time period chosen:

Distinct decadal sub-periods and total 40 years period analysis were done. Those periods data fulfil Fabricant Law that period effects carry a common explanation to remain independent of cross industry correlations and a positive relationship between output growth and productivity growth.

Selection of twenty 2-digit Industries:

Selection of 20 two-digit manufacturing industries cover comprehensively total industrial sector. Choice of Electricity Gas and Steam (IN40+41=41) separately was needed for taking growth, productivity, dispersal of this major infrastructure sector, whose low performance could impede industrial growth. A more dis-aggregative industries classification would cause for problems of non-comparability over a long (40years) time span and for distinct sub periods (each 10years or less).

Data-Base:

The Census of Manufacturing (CMI) data was published each year from 1946 till 1957 with details of input, output, capital and labor for 29 industries. The data was adjusted into 2 or 3-digit classification frame of Annual Survey of Industries (ASI). In the year 1958 only, Sample Survey of Manufacturing Industries (SSMI) was done and SSMI data was available for 3-digit ASIC industry groups. From 1959 onwards CSO-ASI developed a data- base for 63 industries in 3-digit for 200 industries in 7-digit industry groups and 5-digit industry groups of ASIC available for each of the calender year with effect from (w.e.f) 1959 to 1966 that led to adjusting them to the financial year. From ASI 1966 onwards the financial year-wise data came into vogue. In 1972, ASI data was not published.

The CMI[3] and ASI[4] were the databases for all industry studies[5]. But CMI and ASI data are not comparable because of differences in coverage and classification of industries. Many studies in the first decade (1949-1957) of independence were restricted to use CMI data (S. S. Mehta). Some studies ASI data from 1959 onwards could not take into account the industrialization phase of the Second Five-Year Plan period. Studies that used CMI and ASI data and adjusted for changes in classification were by Raj Krishna and S. S. Mehta[6] but some other studies[7] ignored these differences. M .M. Dadi and S. R. Hashim[8] took note of adjusted changes in coverage and in classifications in industrial statistics (1946-64) for each industry group at 2-digit level of aggregation.

3-***Census of Manufacturing Industries***- GoI, Directorate of Indian Statistics, 1946-58, Manager of publications.

4-ASI-GoI, CSO, ASI-1959-65, Department of Statistics, Cabinet Secretariat, Calcutta

5-Mehta S.S. –***Productivity and Production Functions of Selected Indian Industries***, Concept Publishing House, 1974, p-18.

6-Raj Krishna and S. S. Mehta- Productivity Trends In Large Scale Industries, ***Economic and Political Weekly (EPW)***, Oct 26, 1968;

7-Chatterjee, Anil Kumar- Productivity in Selected Manufacturing, ***Economic and Political Weekly (EPW)***, Nov 24, 1973; RR Singh- Productivity Trends and Wages-***Eastern Economist***, April 29, 1966). Chatterjee and Singh ignored these differences.

8-Dadi and Hashim- An adjusted capital Series desired for Indian Manufacturing 1946-64 *Anvesak*, December-1971 takes note of and adjustments for both. At industry level, Dadi and Hashim have adjusted the data at only two- digit level of aggregation in Dadi M. M. and Hashim S. R. - ***Capital-Output Relations in Indian Manufacturing***, Dept of Economics, Faculty of Arts, M. S. University of Baroda- Baroda.

3.3 Adjustments needed for and a Brief Review:

Definitions, Measurements, Coverage and Scope of usage must satisfy consistency for policy-relevant analysis as otherwise non-comparability over time and space due to differences in definitions of units, classifications and coverage will not fulfill any meaningful analysis, interpretation and policy conclusion.

Census of Manufacturing (CMI) sector covered under registered (under Factories Act 1948) units employing 20 or more workers and using power for the period 1946-58 and confined to 29 out of 63 industry groups. From 1959 onwards, ASI dealt with 63 industry groups. ASI census covered all registered firms employing 50 or more workers with the aid of power (or 100 or more workers without power) and sample Part of ASI covered all registered firms employing 10-49 workers with power use and 50-100 workers without power use.

S. S. Mehta[9] (1980) traced comparable industry groups in both to be 27 groups of industries. Two groups that cannot be identified by S. S. Mehta were the 22nd group of CMI (aluminium, copper, brass) and 28th group of CMI (general engineering and electrical engineering). To make CMI and ASI comparable, two adjustments are necessary- one on industrial classification and the other on definitions of units covered as to be on a uniform basis, both needed for industry study. In between ASI and CMI SSMI, 1958 data cover factories employing 10-49 workers using power on any day of 1958 only with the result of non-uniform definitions and inconsistent classification making the three sets of data of industrial statistics of distinct periods non-comparable without adjustments appropriately.

9-S. S. Mehta S. S.- op.cit. pp-20.

Another problem has been that the composition of product mix has been undergoing a sharp, rapid structural change [10]. The derived composition of proportions, distinct growth rates and structural ratios show big jumps over 1960s and 1970s above the 1956-60 frame due to import substitution policy, export led strategy plus an outcome of indigenous enterprise in large, medium and small scale industries.

Data of CMI and SSMI were cross checked with the data from Statistical Abstracts of 1956, 1957, 1958, 1959, 1960 and tried to fit the 3-digit/4-digit factory-units into a two digit frame of NIC-1970 and NIC-1987 and structured our data to fit NIC-1987.

There was an additional problem. CSO-ASI inter-changed the Industry No-30 representing Rubber and its products[11] into Industry No-31 representing Chemicals and its products group from 1989-90. So the necessary corrections that had to be into the data set done for comparability and uniformity. To avoid similar nomenclature problems due to transition from NIC-1970 to NIC-1987 industries IN35 and IN36 were clubbed and called IN36. A similar procedure was followed when IN40 and IN41 was clubbed into IN41. IN39 was excluded from the analysis due to lack of consistent data. Industry number 20 and 21 was clubbed and called Industry Number-21.

10- Mehta S.S.- op.cit.

11-***Summary Results for the Factory Sector-ASI Reports-***1989-90.

3.3.1 Classification, Aggregation and Adjustments for Concordance:

ASI Industries comparable to CMI industries[12] (Foot Note given in the next page of this Chapter)

S. No	CMI Industries	Comparable ASIC Code
1.	Wheat flour	205-1
2.	Rice milling	205-2
3.	Biscuit making	206
4.	Fruits and Vegetables	203
5.	Sugar	207-1
6.	Distilleries & Breweries	211+212+213
7.	Starch	209-7
8.	Oilseeds crushing	209-2+312-1
9.	Edible & hydrogenated oil	209-3
10.	Paints and Varnishes	313
11.	Soaps	319-6
12.	Tanning	291
13.	Cement	334
14.	Glass and Glassware	332
15.	Ceramics	333
16.	Plywood and tea-chest	251-2
17.	Paper and paper-board	271
18.	Matches	319-8
19.	Cottton Textiles	231-3
20.	Woolen Textiles	231-3
21.	Jute Textiles	231-2
22.	Non-ferrous metals	342
23.	Iron and Steel	341-1
24.	Bicycles	385
25.	Sewing Machines	360-11.5
26.	Electric Lamps	370-1.4
27.	Electric fans	370-1.3

Twenty industry groups at the 2-digit level of NIC-87 (National Industrial Classification-1987) have been chosen for classification and grouping with NIC-70, NIC-87, NIC-98 the various industries as given in our data- set in the1956-95 period and compared. The International Standard Industrial Classification (ISIC) and NIC-87 are comparable at each one's 3-digit classification[13].

3.3.2 Data Limitations and Adjustments:

Without proper aggregation one cannot interpret properties of an aggregate production function that governs behavior of TFP because of heterogeneity properties.

For the missing gaps in data sets, as in the year1972, interpolation was resorted to since time series technique demanded a continuous data set. For some other missing values due to distortion in numerical values at its source of physical availability, one nearby point average of two nearby, where necessary was adopted. However, such cases were a few.

12- Source- M. M. Dadi 1973-***Indian Economic Journal***; 1980-81, Vol-28; Oct-Dec 1980 ; Vol-2,pp-28; Note: Both CMI and ASI use the same definition for 'workers' and 'other than workers' as used in Factory Act 1948. (Previous Page in this Chapter)

13-Balance Robert and Sinclair Stuart - ***Collapse and Survival: Industry Strategy in a Changing World***; 1983-George Allen and Unwin- UK. Ch-1, pp-12.

Major Group Aggregated Industry

20-21: Manufacture of Food Products

22: Manufacture of Beverages, Tobbaco and Tobacco Products.

25: (23 - Manufacture of Cotton Textiles) + (24- Wool, Silk and Synthetic Textiles)+(25: Jute, Hemp and Mesta Textiles).

26: Manufacture of Textile Products (including Wearing Apparel, Other than Footwear)

27: Manufacture of Wood and Wood Products, Furniture and Fixtures.

28: Manufacture of Paper and Paper Products and Printing, Publishing and Allied Industries.

29: Manufacture of Leather and products of leather

30: Manufacture of basic chemicals and chemical products (except products of petroleum and coal) (includes inedible oils and fats-315 of NIC-70.

surgical cotton and bandages.

31: Manufacture of rubber, plastic, petroleum and coal products and processing of nuclear fuel.

32: Manufacture of non-metallic mineral products (includes optical glass-321.5. of NIC-70)

33: Basic metal and Alloys industries.

34: Manufacture of metal products and parts, except machinery and transport equipment (includes stoves, hurricane lanterns-345; springs-349 of NIC-70)

35: Manufacture of machinery, machine tools and parts except electrical machinery

36: Manufacture of electrical/electronic machinery, apparatus, appliances and supplies and parts (includes 366.2-electronic control instruments)

36 = 35 + 36.

37: Manufacture of Transport equipment and parts.

38: Other Manufacturing industries (includes 265.1-umbrellas, 321.5-optical glass, and 366.2-electronic control instruments from NIC-70)

40: Electricity generation, transmission and distribution

Source: Concordance tables from NIC-87 to NIC-70 (at 3-digit table) in NIC-1987 document.

CSO evolved the SIC in1962 but subsequent revisions were undertaken in NIC-1970, NIC-1987, NIC-1998. For purposes of comparability of time series a correspondence across these classifications was established with one-to-one correspondence. Wherever it is ‘difficult’ to establish, the criteria of pre-dominant activity was applied to prepare the concordance tables with NIC-1998[14].

14-Industrial Classification in terms of NIC 1987: (Source)

EPW Research Foundation- A Data Base on Industrial Structure in India-ASI 1973-74-1997-98: p-1096-1108.

Concordance of NIC 1987 from NIC 1970 at 3-digit level was as per concordance Tables NIC 1987 from the Expanded version of National Industrial Classification (NIC)-India1970.

Concordance table prepared to make NIC 1987 with NIC 1998

Serial No:	NIC 1987 Code and Nomenclature of Industry Grouping	NIC 1998 Code and Nomenclature of Industry Grouping
1	20+21	151(Prod, Process, Preservation of meat, fish, fruit, vegetable, oils and fats) +152(Manf. of Diary Products)+ 153 (Manf. of Grain Mill Products)+ 154 (Manf. Of other food products)
2	22	16(Manf. of Tobacco Products) + 155(Manf of beverages)
3	26	172(Manf of Other Textiles)+173 (manf. of knitted and Crocheted Fabrics)+161(Manf. of Wearing Apparel except Fur apparel)
4	27	20(Manf. of Wood and products of Wood and Cork except furniture +Manf. of articles of straw and plating material)+ 361(Manf. of Furniture and manufacture NEC)
5	28	21(Manf. of Paper and paper Products) + 22(publishing, printing and reproduction of recorded media)
6	29	182(dressing and dyeing of fur, manf. of articles of fur)+19 (tanning and dressing of leather, Manf. of luggage, handbags, saddlers and footwear)
7	30	24(Manf. of Chemical and Chemical Products)
8	31	23(Manf. of Coke, refined petroleum and refined fuel) +25(Manf. of rubber and plastic products)
9	32	26(manf. of non metallic mineral products)
10	33	27(manf. of Basic metals)+371(Recycling of

		waste and scrap)
11	34	2881(Manf. of structured metal products, tanks, reservoirs, steam generators, manf of structured metal products)+ 2812(mnf. of container of metals, whether or not fitted with tops, metal for LPG mnf. of radiation boilers)+ 289(mnf. of other fabricated metal products)
12	35+36	2813(mnf. of steam generator except central heating hot water boilers)+ 29(mnf. of machinery equipment, NEC)+30 (mnf. of office, accounting and computing machinery)+31(mnf. of electrical apparatus and machinery) +32(mnf. of radio, TV, communication equipment and apparatus)
13	37	383(mnf. of motor vehicles)+385(mnf. of motor cycle and bicycle)+389(mnf. of transport equipment and NEC)
14	38	33(mnf. of medical precision and optical instruments)+369(mnf. of NEC)
15	40+41	401(collection, distribution and purification of water)

Industries from 1956-59 data set of CMI (1956-58) included in NIC 87 classification:

Serial No	CMI(1956-59)	NIC 1987
1	Wheat Flour, Rice milling, biscuit baking, fruit, vegetable processing, sugar and gur, starch, vegetable oils	20+21
2	Distilleries and breweries	22
3	Textiles, Dyeing, Bleaching, Finishing and processing including Mercirizing, Finishing, Calendering, Glazing, Proofing, etc.	23
4	Wool Baling, and Pressing (239.3)	24
5	Varnishes, matches, paints	30
6	Glass(321), Ceramics(323), Cement (324, 327)	32
7	Aluminium, Brass and Copper	33
8	Sewing machines and fans	35
9	Bicycles	37

1960 Classification-Statistical Abstracts[15]

NIC 1987(two digit level)	3-digit level of NIC 1987
20+21	201+202+203+204+205+206+209+212+219
22	220+221+222+224+225
23	230 to 236
26	260+261+mnf of wearing apparel except footwear
27	270+273+275+276+279
28	280+281+289
29	290+293+295
30	300+301+303+309
31	310+311+312+314+315+316+319
32	320+321+322+323+324+329
33	330+331+332+339
35	350+351+352+353+357+358+385
36	360+361+362+363+364+365+366+367+369
37	370+371+372+375+376+377+379
38	380+381+382+383+386+389
40+41	400+401+410+

15-Data Gaps in these early years till 1965 were filled up by making a study of the Statistical Abstracts.

For the Year 1965:

NIC1987 in 1965 year	3-digit level of NIC 1987
20+21	202.1+203+204+205.1+205.3+206+207.1+ 207.2+208+209.1+209.10+209.2+209.3+209. 4+209.5+209.6+209.7+209.8+209.9+312.1+
22	211+212+213+214+220.1+220.2+220.3+ 220.4+220.5+220.6+204(mnf. of ice)
23	231.7+231.1+239.1
24	239.3+231.3+231.4+231.5
25	239.2+239.4
26	231.6+231.8+231.9+232+233+239.3+239.5+ 239.6+239.8
34	260.2+260.3+350.1+350.2+etc

For the year 1968:

Serial No:	NIC 1987 (2-digit level)	1968 (3-digit level)
1	20+21	202.1+207.1+209.10
2	22	399.6 (mnf. of Ice)

For the Year 1969:

1981-1969 year i on (2digit level)	Statistical Abstracts-1969 correspondence of 1987 (3-digit taken into account)
	201+202+203+204.1+205+206+208+209+312
	211+212+213+214+220
	232+233+239+243+244
	251+252+259+260
	280+271
	291+293+241
	311+313+319
	300+329+321
	331+332+333+334+339
	341+342
	350
	360+370
	381+382+383+385+386+389
	391+392+393+394+395+399
	511

For 1970:

NIC 87(2-digit level)	NIC70(3-digit level)
30	311.1.1+311.1.2+311.1.3+311.2.1+311.1.1+311.4+311.9+311.10+311.5+311.6
31	319.9+319.10+321+300.1
32	399.17+331.10+331+332+333+334+339
34	260.2+350(-350.9+350.1)
37	381+382+383+385+386+389
38	391+399+392-393+394+235

3. 4.1Theoretical and Analytical Framework:

The theoretical and analytical framework of our study integrates two strands of knowledge relating to measures and measurements, Growth and of Regional Dispersal and their causal relationship. First, it analyses and interprets Growth Measures of Size Variables and Structural Ratios, of Partial Productivities of Factors and Total Factor Productivity (TFP) and relates Returns to Scale, Total Factor Productivities of 2-digit Indian Industries. Then it finds out Herfindahl-Hirshman Index and Coefficient of Variation of 5 size variables and Structural Ratio of Capital Intensity (K/L), across different identified States and UT wise. It also uses Grossack's method of determining and understanding the process evenness or otherwise of regional dispersal over four decades and through cross- checking b^ results. Finally, causal analysis as to whether dispersal of Industries is caused by TFPG, K/L, Capital Productivity and Labor Productivity or a combination of them was done.

The concept of the Production function specifies the technical relationships between attainable outputs and a specified set of inputs for a given technology with the relevant parameters of production function providing all possible [feasible and/or efficient] outputs for a given combination of inputs and factor use. An optimum capacity output is the most efficient unique one corresponding to the unique combination of input and factors employed. Scale of operation increases up-to that optimum capacity with minimum average cost of production, given fixed market prices of inputs, factors and outputs. Cobb Douglas production function was estimated to get parameters which are exponents of Labor and Capital, since those coefficients are output elasticities of Labor and Capital respectively used as weights for TFP measurements in Domar TFP measures for individual industries at two-digit level of disaggregation[16].

16- Sims C. A -'The Dynamics of Productivity Change- A Theoretical and Empirical Study' (**Unpublished dissertation, Harvard Univ**, Aug 1967), suggested contribution of K and L to gross output separately from contribution of material input. But a separability assumption, though unrealistic, is required such as: $Q^1=f(K,L,K)=g(h(K,L),M)$ where $Q^1$is gross output, M is material input and h(K,L) would be real value added). Susanta Basu in **Quaterly Journal of Economics (QJE),** Vol-111, pp-639-1268, 1996(Pro Cyclical Productivity: Increasing Returns or cyclical utilization?)) also says that material inputs do not have variable utilization rates and materials are likely to be used in fixed proportions with value added.

The study adopts Cobb Douglas Production function due to its easy adaptability for both embodied and disembodied capital with its assumption of unitary elasticity of substitution. This facilitates analysis of measures of returns to scale, changes in factor intensities, output elasticities of factor inputs and analysis of TFP as in Domar. The output elasticities of factors are used as weights for factors while computing TFP. This analysis helps in inferring growth and employment implications of different industries assuming unitary elasticity of substitution as given for Cobb Douglas production Function. Every production function can yield four inter-linked parameters. They are; Elasticity of Substitution, returns to scale, efficiency and capital intensity. K/L reveals the capital intensive-ness of technology while elasticity of substitution determines the specification of the production function.

CDPF estimation provides returns to scale parameter as sum of output elasticities of factors/inputs that could be estimated directly as regression coefficients of log- linear transformation of CDPF.

The constant returns to scale continuous production function (CRSCPF) is another form of aggregate production function expressing the factors and outputs in per capita terms and is widely used in Theoretical models of economic growth with/or without technical progress.

The theoretical framework and policy implications of Neoclassical Economic growth and production function can be extended to include the role of technical progress or TFP. If such changes in technology result in changes in ratio of marginal products, technological change is non-neutral, otherwise it is neutral. Technology is Hicks neutral. If K/L constant, ratio of marginal productivity is also constant.

The Arithmetic Index of TFP:

The Arithmetic Index was introduced by Abramovitz[17] (1956) and J.W. Kendrick[18] (1961). $\Delta A^{k}{}_{t} = \Delta Q_t/Q_0 \div [\, s_0\,(\Delta L^{t}/L_{0}) + (1- s^{0})\,\Delta K^{t}/K_{0}]$

where $s_0 = PL_0/P_0Q_0$ where s_0 is share of Labor in Net Value Added in base year ‘0’. P_{k0} and P_{L0} are prices of Capital and Labor in base year ‘0’.

17-Abramovitz M-Resource and output trends in USA since 1870-Papers and Proceedings of ***American Economic Association (AEA)***, 1956-pp-5-23.

18-Kendrick J.W.-Productivity in the USA- ***NBER***, Princeton.

Kendrick Index of TFP has an implicit production function whose output is linear combination of appropriately weighted shares of factors.

Similarly, Solow[19] method of finding TFP provides scope for analysis of capital deepening and capital widening possibilities through the Solow Fundamental equation: 6 K= s f(k) –n k where 6 K is rate of accumulation per L or capital intensity which is positive for a capital deepening industry. sf(k) are investible resources per capita, out of internal savings to meet labor force growth rate (n) determined exogeneously and 's' is savings rate that is amenable to monetary and fiscal manipulation. The policies of subsidy, incentive, controls regulation can be obtained if their consequences for influencing 6K to draw guidelines for industrial investment planning.

Evsey Domar [20] said that in Kendrick's formulation, marginal products change proportionately to TFP and so are not independent of TFP. Thus MRTS did not vary when price or quantity varied. Thus it represented a case of circular reasoning. But Kendrick countered this by continuously changing weights but it did not change the nature of the problem encountered. So very acute interpretation is necessary in case of Kendrick results.

19- Solow- Technical Change and Aggregate Production Function- ***Review of Economics and Statistics***, Vol-39-1957-pp-312-20.

20 -Domar (1962)- 'On Total Productivity and All That'- ***Journal of Political Economy***, Dec. 1970.

Domar preferred the Geometric Index as rates of growth are directly measured in a multiplicative production function of Cobb Douglas type $V_t = A_t^D L_t K_t$). So, $6A_t^D / A_t^D = 6V/V - (\alpha 6L/L + (1-\alpha) 6K/K)$ is the rate of TFPG.

Domar also suggested fixed weights that are output elasticities of Labor and Capital similar to Kendrick weights (i.e.) shares of L and K in Value Added and both assumed Constant Returns to Scale (CRS) providing the necessary conditions for competitive equilibrium as in the CD form of p. f.

<u>Solow's Geometric Index of TFP:</u>

In a pioneering contribution, Solow allowed the factor prices and marginal products to change continuously over time and presented his Geometric Index as an improvement over Kendrick and Abramovitz.

Solow started with a more general pf. $Q = A_t^S F(K.L)$.

Since A^S (t) varies with time and independent of K and L, technological change is by assumption, disembodied and Hick's neutral. Under competitive conditions, $6Q/Q = 6A^S / A^S - (\alpha 6K/K + \beta 6L/L)$

Assuming CRS and defining q= Q /L, k= Q /K, Production Function turns out to be Constant Returns to Scale Continous Production Function (CRSCPF), then

$\therefore 6q/q = 6A^S / A + \alpha\, 6K/K$ where 6q/q is the rate of increase in output per worker.

The Solow growth rate is also derived from the following:

$G A_t^S = g_Q(t) - [s_t (g_L(t) + (1-s_t) g_K(t)$

Where g's are annual growth rates in the respective variables and s_t is income share of Labor at time t.

A_t^S index can be computed assuming $A_0 = 100$ for the base period '0' and setting up $A_t^S = A_t^{S-1} [1+g_A(t)]$, for t=1,2,3…

Solow Index uses shifting weights, unlike Kendrick and Domar that use constant weights for the total time period under consideration.

3.4.2: Analytical Framework for Regional Dispersal:

Herfindahl-Hirshman Index (HHI==ΣX_i^2 - $[\Sigma X\ i]^2$)[21] and Coefficient of Variation (C.V.=SD/ Mean of X) formed the measures of dispersal of 5 variables and structural ratios for each of the 2-digit industry of which the two measures together taken as the first stage of analysis for the Study of industries over space /regions or states. But based on HHI or HI and CV alone, whether expansion in industries is evenly shared by all spatial units cannot be inferred because these two provide the extent of concentration/dispersal in aggregate for all States/UT over All India. So in this study, Grossack's method[22] is used to explain the evenness or otherwise of regional dispersal/concentration of industries. Grossack derived a method of analyzing the process of concentration of economic power by use of regression techniques and Herfindahl Index.

To begin with, HI $_{xi}$ (where x in this analysis pertains to size variables or structural ratios in some particular year) where i =1…..n. For Grossack, X_i is the market share of the i^{th} firm as a ratio and n is the number of firms in the industry. If x_i is the deviation of the i^{th} firm's share from the mean, then the above equation can be written as $HI_x = \Sigma x_i^2 + 1/n$.

21- HI is computed as : $H=\Sigma X_i^2 - [\Sigma X\ i]^2 = \Sigma X_i^2 - [n\ \bar{X}_i]^2 = \Sigma X_i^2 - n^2\ \bar{X}_i^2 = \Sigma X_i^2 / n - n\ \bar{X}_i^2 = \Sigma X_i^2 / n^2 - X_i^2$

22-Grossack I. M. - "One Concept and measurements of permanent industrial concentration"- ***Journal of Political Economy***, Vol-60 (A) 1970, pp-745-760.

Grossack identifies the two parts comprising the HI (i) sum of squared deviations and the (ii) reciprocal of the numbers of firms. Then he defines a initial permanent HI for a particular, say, base year 0 and since 'n' is independent of both base and terminal years, the permanent index can be distinguished from the observed index in the sum of squares term. He then substitutes sum of squares of the permanent components in the observed index and proceeds to infer a value for the sum of squares index [23].

Grossack distinguished permanent and transitory components by identifying firms that have large shares of a particular market in a particular period i.e. beneficiaries of a set of advantages relative to the smaller firms in that market. Among these advantages are patent holdings control of scarce resources, good trade conditions access to favorable financing, etc. Some of these advantages are permanent and some transitory. He hypothesized that these advantages are the ultimate bases of the market power of larger firms. However, the inference of market power shares of large versus small firms is of no concern to our regional dispersal analysis of each industry group wherein there is no further breakup or disaggregation of either industry group of state or UT of India as to have units of measurement and to check for further analysis of nature of and extent of shares in the aggregate (s) concerned.

23- Grossack I .M. - "Towards integration of static and dynamic measures of concentration" ***Review of Economics and Statistics***, Vol-48, 1965, pp-301-308.

From the product moment form of the regression coefficient $b = r\ \sigma_y/\sigma_x$ where r is the coefficient of correlation of the market shares in the two years and σ_y and σ_x are the standard deviations of the shares in the subscript years.

3.5 Variables, Definitions and Concepts:

FACT	=	Factories		
NW	=	No: of workers		
FC	=	Fixed Capital		
TI	=	Total Inputs		
GVA	=	Gross Value Added		
NVA	=	Net Value Added		
NW/FACT	=	Employment per factory		
O2F	=	NVA/FACT	=	Output Growth per Factory
KI2	=	FC/NW	=	Capital Intensity
K2P	=	NVA/FC	=	Measure of Capital Productivity
K1P	=	GVA/FC	=	Measure of Capital Productivity
L1P	=	NVA/NW	=	Measure of Labor Productivity
L2P	=	GVA/NW	=	Measure of Labor Productivity
KF	=	FC/FACT	=	Growth of Capital Employed per Factory
OIF	=	GVA/FACT	=	Output Growth per Factory

CMI data by size define the following thus:

Fixed Capital- This is the aggregate book value of land, buildings, plant, machinery and transport equipment. Other fixed assets such as furniture and fixture are in current prices. Book value is not given separately and so no adjustment in capital data is possible. This is deflated by the Wholesale Price Index of Machinery and Transport at 1981-82 prices.

Working Capital: Working Capital, also in money terms, consists of aggregate money value of materials, stores, fuels, semi-finished goods and by-products, cash in hand at the bank and algebraic sum of sundry creditors.

Productive Capital: It consists of both fixed and working capital both added to arrive at total productive capital in real terms.

Number of people employed: (L): It consists of workers and persons other than workers.

Definitions and Concepts[24] (ASI-1995-96):

Gross Output- Defined to include ex-factory value of products and by-products manufactured during the accounting year. It also includes receipts for non-industrial services rendered to others, receipt for work done for others on materials supplied by them, value of electricity sold and net balance of goods sold in the same condition as purchased.

Gross output =Value of output =Total output = GVA.

Net Value Added (NVA)- is increment to value of goods and services that is contributed by factory and is obtained by deducting the value of total inputs and depreciation from value of output.

Therefore, NVA = Value of output- total input- depreciation.

Total Inputs (TI)- comprises total value of fuels, materials consumed (as defined below) as well as expenditures such as 1. Cost of contract and commission work done by others on materials supplied by factory. 2. Cost of materials consumed for repair and maintenance of a factory's fixed assets including cost of repairs and maintenance work done by others to factory's fixed assets.3. inward freight and transport charges; rates and taxes excluding income tax, postage, telephone and telex expenses, insurance charges, banking charges, cost of printing and stationary.

Capital: Value of capital refers to gross value of fixed capital plus inventories. The value of fixed capital as reported in CMI and ASI represent the written down (book) values (where depreciation is calculated according to the rates allowed by the income tax authorities) and hence do not reflect the true value of capital.. *Actually it is the replacement cost of capital that is congenial to production functions.*

24- Annual Survey of Industries (ASI)-1995-96.

The empirical evidence would suggest that the relationship between replacement cost of new K and output is more stable because efficiency of assets does not decline as accounting procedures show.

The gross value and purchase price (suitably adjusted for price variations) is the closest to capital theory[26] So far as the value of inventories is concerned, since it is available in current prices, it is simply added to the adjusted value of fixed capital to arrive at the figure of total capital.

Productive Capital (PC)- Fixed Capital (FC) + Working Capital (WC)

Invested Capital (IC) = Fixed Capital (FC) +physical working capital (PWC)

FC refers to land, building, plant, machinery, furniture, etc.

WC refers to stocks of materials, fuels, semi-manufactured products, etc.

WC = PWC + cash deposit in hand and at bank + net balance receipts over amounts payable. It excludes unused overdrafts facility, fixed deposits, advance for fixed assets, loans and advances, long-term loans.

Physical Working Capital (PWC) = defined to include all physical inventories, owned, held or controlled by factory such as fuel, materials, stores, etc. It includes stock of materials, fuels, stores,etc. purchased for re-sale, semi-finished goods and work in progress on account of others, and goods made by factory ready for sale at end of accounting year. It also includes finished goods processed by others from raw materials supplied by factory and held by them. However, it excludes finished goods processed by factory from raw materials supplied by others.

Fixed Capital (FC)- represents depreciated value of fixed assets owned by the factory as on the closing day of the accounting year. It includes fixed assets of head office allocable to factory and also full value of assets taken on hire-purchase basis (whether fully paid or not) excluding interest element. Fixed assets are those that have a normal productive life of more than one year. It excludes intangible assets and assets solely used for post-manufacturing activities such as sale, storage and distribution.

26- Dadi and Hashim, - Adjusted capital series for Indian Manufacturing, **Anvesak** -1946-1964)p-236-248, vol-1.

Workers = Excluded are persons holding positions of supervision or management or employed in administrative office, store keeping and welfare sections, sales department as those engaged in purchase of raw materials, etc. and in the production of fixed assets for factory and watch –and- ward staff.

It included all persons employed directly or thro’ any agency whether for wages or not and engaged in any manufacturing process or in any kind of work incidental/committed to manufacturing. Also included are labor engaged in repairs and maintenance or production of fixed assets for factory’s own use or labor employed for generating electricity or producing coal, gas are included.

ASI defines workers as those that are employed in the manufacturing processes (or any other kind of job incidental to or connected with the manufacturing process).

Analysis of Growth Rates and Determinants

4.1 Introduction

This Chapter 4 analyzes 1-growth rates of 2-digit (SIC*) industries over a 40-year period from 1956 to 1995 and ranking the industries; 2- Total Factor Productivity Growth (TFPG) of the 2-digit industries by Kendrick, Domar and Solow measures with relevant weights to labor and capital growth rates, for which purpose Cobb Douglas (CD) production function (p f) was estimated to find out output elasticities (exponents) of labor and capital. The estimated Cobb Douglas production function exponents sum provides to check for returns to scale (increasing, decreasing, constant) for each 2-digit group of Indian industries for 40year period of 1956-95 and 10year time periods each covering in sequence a total period of 1956-95.

This Chapter has another section bringing out causal factors as determinants of growth rates linking with partial productivities of factors, similarly with Capital Intensity (K/L) and with TFPG; so as to show whether growth in output is propelled by growth in partial productivities of factors, Capital Intensity (K/L) ratio and TFPG in each of the industries in the relevant periods of study.

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* SIC**:** Standard Industrial Classification of India is closely similar, at two digit level, to Annual Survey of Industries Classification (ASIC) 1959 (onwards), as followed in ASI (Census Part) and NSS (Sample Part of ASI) Reports, Published by Central Statistical Organization (CSO), NSS Organization (NSSO), Government of India, New Delhi. Accordingly, 2-digit level Industry Groups in all these Reports had the same/similar names, for each of Industry Groups; hence the two digit industry classification is justified for comparability.

The analysis of growth rates and of their causal factors indicated relative importance of industries so that policy-guidelines can be better inferred. Growth rates are the estimated regression coefficients of Semi log form***: log Y= a + b t***. The results and the major findings of this Chapter 4 are further investigated in the following chapters: to find out as to whether they can serve as causal factors to explain the regional dispersal of 2-digit industries and to understand the economic mechanism involved for the purpose (s) and to trace the desired linkages of dispersal, growth, structural ratios and of size variables.

4.2. Analysis of Growth Rates of Variables and Structural Ratios

4.2.1 Analysis of Growth Rates of Factories

Table: 4.2.1: Growth Rates of Factories of 2-digit Industries in 1956-95 (in the order of ranking)

Ind. Name	Ind. No.	Gr. rt.(descend. order)
Food Prd.	21	33.1%
Leath Prds	29	19.2%
Met.Prd	34	18.9%
Tex	25	17.5%
Ru-Pet-Co	31	14.5%
Bever'g	22	12.6%
NmMp	32	10.4%
Paper	28	10.1%
Trans. Eq.	37	9.4%
Wood Prd.	27	9.2%
Chem.	30	9.2%
Basic MA	33	8.8%
M. o. t. T.	36	7.9%
Tex Prd.	26	7.7%
OMI	38	5.8%
EGS	41	1.2%

Food Products (Industry No 21=20+21) grew at 33.1% p.a. (maximum) over the years 1956-95 which is a non- durable essential for high growth and base population with their high daily consumption norm of MPC (APC) and Engel Elasticity. Then followed the many User and Intermediate (Input) Industries whose growth rates were: 19.2%growth rate in case of Leather Products (IN29), 18.9% in Metal Products (IN34), 17.5% for Textiles in Silk, Woolen, Cotton and Jute (IN25=23+24+25), 14.5 % in Rubber, Petroleum and Coal (IN31) and 12.6% in of Beverages (IN22).

Paper Products (IN28) grew at 10.1% and Non-Metallic Mineral Products (IN32) at 10.4%. They serve as material inputs to economic and social overhead sectors and in services like construction, education, electronics and software development in the country. In turn many sunrise industries get developed for government consumption and investment goods industries.

Wood and Wood Products (IN27) is an intermediate good serving the housing activity and it's growth at 9.2% is due to high wage rate. Chemical and Chemical Products (IN30) at9.2%, a sunrise industry since 1970s and 1980s, had little/no growth in 1950s and 1960s Pharmaceuticals grew in 1990s as new sector capable of further growth.

Similarly noted is Growth of Transport Equipment and Parts (IN37) at 9.4%, a key infrastructure and capital goods industry.

But Intermediate Industry like Basic Metals and Alloys (IN33), growing at a low of 8.7% and a User Industry like Textile Products (IN26) at 7.7% growth lagged behind due to lack of production planing though in the latter context, material of textile products for garments was high.

Capital goods industries like Electrical and Non-Electrical Machinery other than transport comprising IN35 and IN36, a key sector for enhancing industrial growth in an economy planned on basis of heavy industry strategy, grew at 7.9%, showed a slowdown in the latter 3 decades.

Other Manufacturing Industry (IN38) at 5.8% revealed the second lowest growth rates while Electricity, Gas and Steam (IN41=40+41) at 1.2% shows the lowest growth rate.

The long-term trends in this comparative study of growth rates factories of 2-digit industries in India speak of likely weak forward and backward linkages and non-conformity of industrial units in numbers with lack of planning to raise the requisite number (s) of units that generate materials, capital, infrastructures and industrial output growth rates needed for final consumption goods, investment goods and exports of Indian economy. However, the earlier analysis should take into account the differential scale of operation of the units. These two together is reflected in their final result of net Value Added of industries.

4.2.2 Analysis of Growth Rates in Net Value Added (NVA) of Individual Industries for 1956-95

Table: 4.2.2. Net Value Added (NVA) Growth Rates (in descending order)

Ind. Name	Ind. No.	gr. rt (in descend.order)
EGS	41	18.1
Tex Prd	26	17.2
Lea.Prd	29	17.1
Ru-P-Co	31	15.9
Bever'g	22	15.9
TransEq	37	14.9
MotT	36	14.9
Met.Prd	34	13.7
Ba MA	33	13.7
Paper	28	13.3
NmMp	32	13.2
Chem.	30	13.2
OMI	38	13.1
Food Prd	21	12.6
Wood Prd	27	11.1
Tex	25	10.1

Table (4.2.2) shows growth in NVA being the highest in case of Electricity, Gas and Steam (IN41) at 18.1% followed by 17.2% growth rate in Textile Products (IN26) and 17.1% in Leather and Leather Products (IN29). This was followed with growth rates ranging between 12.6% in case of Food Products (IN21) to 15.9% growth rate in case of Chemical and Chemical Products (IN31). The second lowest is seen in Wood and Wood Products (IN27) at 11.1% and the lowest NVA growth rate has been recorded by Textiles (IN25) at 10.1%. However, Textile Products grew at one of the highest rates at 17.2% but textiles showed the lowest growth at 10.1%. This indicates lack of production planning possibly due to shortages, bottlenecks, lack of demand and weak linkages.

4.2.3 Analysis in Growth Rates in Gross Value Added (GVA)

Table: 4.2.3
Growth Rates of GVA of 2-digit Industries in 1956-95 (in their order of rankings)

Ind Name	Ind No.	Gr. Rt. (in descend. Order)
Ru-P-Co	31	18.2
Lea..Prd	29	18.1
EGS	41	18
Tex Prd	26	16.5
Bever'g	22	16.4
MotT	36	16.4
Chem.	30	16.3
Tran.Eq	37	15.6
Paper	28	15.3
Met.Prd	34	15.3
Bas. MA	33	15.2
NmMp	32	14.8
OMI	38	13.9
Fod Prd	21	13.2
Wood Prd	27	12.9
Tex	25	11.8

Compared to NVA growth rates, the GVA growth rates were usually higher or marginally lower or the same. For example, in case of Textile Products (IN26) where GVA growth rate was lower at 16.5% compared to NVA growth rate of 17.2%. Electricity, Gas and Steam (IN41) GVA growth at 18% was similar to 18.1% of NVA growth in that industry. In Textiles of Cotton, Woolen, Silk and Jute (IN25), lowest GVA as well as lowest NVA is recorded. Rubber, Petroleum and Coal (IN31) had the highest growth rate in GVA at 18.2% while NVA growth rate in IN31 was moderately high at 15.9%. Leather and Leather Products (IN29) GVA growth rate was 18.1% while NVA growth rate showed 17.1%. Wood and Wood Products (IN27) with GVA growth of 12.9% but growth in NVA was 11.1%, though both values were on lower in their respective categories. So is the case with Electrical and Non Electrical Machinery other than transport (IN36) where NVA recorded 14.9% growth but GVA showed 16.4%. Paper showed NVA at 13.3% but GVA at15.3%. While wider differences in growth rates in GVA and NVA of a few industries like Paper, Wood, MotT, could be due to growth of capital depreciation or capital replacement or both, in all other industry groups shown above, growth in capital depreciation and replacement may not be too high to be accounted for.

4.2.4: Analysis of growth rates in Employment or number of workers (NW) absorbed in respective industries

In the following subsection, growth analysis of employment or number of workers (NW) absorbed in industries is done (Table 4.2.4) because the employment growth variable may differ from the result of output growth.

Table 4.2.4

Growth Rates of NW of 2-digit Industries in 1956-95

(in the order of their rankings)

Ind. Name	Ind. No.	(Gr. rt. descend. Order)
Food Prd	21	14.7
Ru-Pe-Co	31	7.7
Bever'g	22	7.1
Leath.Prd	29	6.9
EGS	41	6.7
Tex Prd	26	5.1
NmMp	32	4.3
TransEq	37	4.3
Tex	25	2.3
Met.Prd	34	3.1
Wood Prd	27	2.2
Paper	28	3.8
Chem.	30	3.8
Basic MA	33	3.9
MotT	36	3.9
OMI	38	1.8

The low growth rates in employment of number of workers (NW) in most of the 2-digit manufacturing industries confirms that industries except Food Products (14.7% growth rate) are in general low labor-intensive ones in large scale, medium scale industries and in some small scale industries too. Employment growth rates ranged from 5.1% in Textile Products (IN26) to 7.7% in Rubber, Petroleum and Coal (IN31). Beverages (IN22) at 7.7% is followed by Leather and Leather Products (IN29) at 6.9% and Electricity, Gas and Steam (IN41) at 6.7%, while Paper and Paper Products (IN28), Chemical and Chemical Products (IN30), Non-Metallic Mineral Products (IN32), Basic Metals and Alloys (IN33), Metal Products (IN34), Machinery Other than Transport (IN36) and Transport Equipment and Parts (IN37) ranged in employment growth rates between 3.1% to 4.3%. It also reflects of heavy industry strategy since 1956 to 1980s and no employment planning motivations on the part of industries (both large scale and small scale and even to date). But influence of globalization and import liberalizations of capital inflows during the last two decades and Economic reforms of Industry, Trade, etc. New Economic Policies or Structural Adjustment and Stabilization Policies- all addressed to emergence of capital Markets, Stock Markets with lower interest rates for financial, and physical fixed, working capital use, capital intensive speculative activities of real Estates, Five Star Elite Culture. No skilled, unskilled employment planning for implementation is envisaged in practice to employ them, particularly due to the last two decades brain drain of the trained and technically and professionally educated at huge costs in Indian Higher and Vocational courses Learning Centers, financed, encouraged and helped by Globalization, Import Liberalization of Capital Inflows, Unutilization and Underutilization of capital/ capacities.

Low employment growth rate figures in Beverages (2.2%), textiles (2.3%) and other manufacturing industries (1.8%) point to lacunae in employment planning and if properly planned can reveal far more substantive employment absorption capacity.

4.2.5 Analysis of growth rates in another employment variable, i.e. WF defined as NW/FACT described as number of workers per factory in each industry.

Table: 4.2.5
Growth Rates in Employment Per Factory in 2-digit Industries for 1956-95
(in descending Order)

Ind Name	Ind No.	Growth Rates (in descend. Order)
Tex	25	7.2
Wood Prd	27	6.9
Ru-Pet-Co	31	6.7
Leath.Prd	29	6.2
Paper	28	6.2
NmMp	32	6.1
Food Prd	21	5.8
Met.Prd	34	5.7
Bever'g	22	5.5
EGS	41	5.4
Chem.	30	5.3
TransEq	37	5.1
OMI	38	4.9
Basic MA	33	4.8
MotT	36	4.1
Tex Prd	26	2.6

The results of growth rates of work force per factory is the least in Textile Products while the rest are co-terminus with employment of workers growth rates in many cases, i.e. Machinery other than Transport (IN36), Transport Equipment and Parts (IN37), Electricity, Gas and Steam (IN41), Basic Metals and Alloys (IN33), Rubber, Petroleum and Coal (IN31), Leather and Leather Products (IN29) and Wood and Wood Products (IN27). However, employment of workers per factory (WF) growth rates were higher compared to growth in Number of Workers (NW) of Beverages (IN22), Textiles (IN25), Textile Products (IN26), Paper (IN28), Chemicals (IN30), Non-metallic mineral (IN32), Metal Products (IN34) and Other Manufacturing Industries (38). Labor Intensity is expected to be better in daily used household necessities like Food Products and Textile Products Industries but is found to be the least with respect to .criteria of workers per factory growth in Textile Products (IN26).

4.2.6 Analysis of growth rates in Fixed Capital (FC)

Table 4.2.6
Growth Rates of FC of 2-digit Industries in
(in the order of their rankings)

Ind Name	Ind No.	Gr. Rt (descending order)%
EGS	41	14.4
Basic MA	33	12. 7
Chem.	30	12.4
MotT	36	11. 8
Leath.Prd	29	11 .4
NmMp	32	11.2
Ru-Pet-Co	31	10 .9
Bever'g	22	10.7
Paper	28	10.4
TransEq	37	10.4
Food Prd	21	9.7
Met.Prd	34	8.3
Tex Prd	26	7.6
Tex	25	10.2
OMI	38	5.1
Wood Prd	27	4.4

The growth rate of FC is the highest in Electricity, Gas and Steam (IN41) at 14.4%, it being a capital and fuel-intensive or their infrastructure intensive industry followed by higher growth rates of Basic Metal and Alloys (IN33), Chemical Products (IN30), Metal Products (IN34), Leather (IN29) and Non-Metallic Mineral Products (IN32) at 12.7% and 12.4%, 11.8%, 11.4% and 11.2% respectively. These are all capital intensive intermediate input based industries. This is followed by similar intermediates like Rubber, Petroleum and Coal (IN31) and further followed by consumer goods industries like Beverages (IN22), Paper (IN28), Textiles (IN25) and Capital Good like Transport Equipment and Parts (IN37) with growth rates of 10.9%, 10.7%, 10.4%, 10.1% and 10.4% respectively.

This was followed by Metal Products (34), Textile Products (IN26), Other Manufacturing Industries (IN38) and Wood Products (IN27) recording low growth rates in FC at 8.3%, 7.6%, 5.1% and 4.4% respectively. These are of consumer goods and intermediates due to low intensity of fixed capital that resulted n low growth in fixed capital stock and low pace of fixed capital formation.

4.2.7 Analysis of Growth Rates in Capital Per Factory (KF):

Table: 4.2.7

Growth Rates of KF of 2-digit Industries in 1956-95 (in the order of their rankings)

Ind Name	Ind No.	gr.rt (des)%
EGS	41	13.3
Met.Prd	34	5
Wood Prd	27	4.9
Basic MA	33	3.6
MotT	36	3.8
Ru-Pet-Co	31	3.5
Food Prd	21	3.5
Chem.	30	3.2
Leath.Prd	29	2.9
Tex Prd	26	2.6
Tex	25	2.6
Bever'g	22	1.9
Paper	28	1.8
OMI	38	1.7
TransEq	37	0.9
NmMp	32	0.7

All Industries growth rates in KF were admittedly low because Factories growth rates were better than fixed capital growth which were facing shackles of license permit economic set-up. This is seen in case of Wood Products (IN27) at4.9% (FC growth rate. was less at 4.4%), this being a labor-intensive industry. Similar Labor Intensive Textile Products (IN26) KF growth rate was at 4.7% (FC growth rate was at 7.6%). Electricity, Gas and Steam (IN41) had the highest growth rate in KF at 13.3% (as 14.4% in FC growth rate), being a high capital intensive fuel input, less in number of plants/ factories but a key to infrastructure and end use industries sectors.

4.2.8 Analysis of Growth Rates in Capital Intensity (KI2=FC/NW)

Table: 4.2.8 Growth Rates in KI2 for 2-digit Industries for 1956-95

Ind Name	Ind. No.	Gr.rt. (descend)%
Tex	25	9.8
Basic MA	33	8.7
Chem.	30	8.6
Tex Prd	26	8.5
MotT	36	7.8
EGS	41	7.8
NmMp	32	6.8
Paper	28	6.5
Food Prd	21	6.4
TransEq	37	6.1
Met.Prd	34	5.3
Leath.Prd	29	4.5
OMI	38	4.2
Bever'g	22	3.6
Ru-Pet-Co	31	3.2
Wood Prd	27	2.2

The higher growth rates in capital intensive (KI2=FC/NW) range from 9.8% of Textiles, followed by Basic Metals (IN33) at 8.7% and Chemicals (IN30) at 8.6%, all being Intermediates. Machinery Other Than Transport (IN36) at 7.8% and Electricity, Gas and Steam (IN41) at 7.8% are the other higher growth industries, both being Capital intensive. Textile Products (IN26) follows next at 8.5%. High capital intensity took place for Textiles and Textile Products due to forward linkage. Chemicals and Basic Metals' high capital intensities growth resulted due to heavy industry strategy especially in these two, and for overall growth due to both forward and backward linkages for the new sunrise industries of pharmaceuticals, Electrical and Electronics Machinery other than transport (36) that are capital goods industries.

The medium growth industries are Non-Metallic Mineral Products (IN32) at 6.8%, Paper Products (IN28) at 6.5%, Food Products (IN21) at 6.4%, Transport Equipment and

Parts (IN37) at 6.1% and Metal Products (IN34) at 5.3%. Food Products showing some capital intensity is due to increasing use of agricultural machinery, tractors, HYV seeds, fertilizers, irrigation pump-sets of new technology.

The low growth industries are Leather Products (IN29) at 4.5%, Other Manufacturing Industries (IN38) at 4.2%, Beverages (IN22) at3.6%, Rubber, Petroleum and Coal (IN 31) at 3.2% and Wood Industries at 2.2% of both Intermediate and Consumer Goods.

4.2.9 Analysis of Growth Rates of Output measured in terms of GVA/FACT and NVA/FACT

Table: 4.2.9 Growth Rates of Output Measured in terms of GVA/FACT and NVA/FACT

O1F	**O1F**	**O1F**	**O2F**	**O2F**	**O2F**
Ind Name	Ind No.	gr.rt(des)%	Ind Name	Ind No.	gr.rt(des)%
EGS	41	16.8	EGS	41	16.9
OMI	38	9.1	Tex Prd	26	9.8
Leath.Prd	29	8.8	OMI	38	8.2
Tex Prd	26	8.8	Leather	29	7.4
MotT	36	8.8	MotT	36	7.0
Chem.	30	7.2	Food Prd	21	6.3
Food Prd	21	7.0	TransEq	37	5.5
Basic MA	33	6.4	Ru-Pet-Co	31	5.2
Met.Prd	34	6.4	Basic MA	33	5.1
TransEq	37	6.2	Met.Prd	34	4.8
Paper	28	5.8	Chem.	30	4.1
Tex	25	4.4	Bever'g	22	3.3
NmMp	32	4.4	Paper	28	3.2
Wood Prd	27	3.7	Tex	25	3.0
Ru-Pet-Co	31	3.7	NmMp	32	2.7
Bever'g	22	3.7	Wood Prd	27	1.9

Textile Products (IN26) alone is a specific single industry group as capital intensity grew at a high of 8.5% similar to employment per factory growth unlike low employment growth in terms of NW. This indicates growth in skilled, technical and professional category with unskilled labor being replaced or substituted by capital intensification and concomitant technology advancements.

Exceptions apart, growth rates in NVA seen to be sound for purpose of analysis of comparative growth rates of Industries in India contributed by capital, labor and factory growth rates [as in the above pages]. Growth rates of factories in Beverages, Food, Non-

Metallic, Wood and Textiles were all on the higher side that it gave lower NVA per factory growth rates over the long term because of lower commensurate gains in outputs.

4.3 Partial Productivity Measures: This section deals with analysis of growth rates in Labor productivity and capital productivity of 2-digit Indian Industries over 1956-95.

4.3.1 This sub section deals with growth rates in capital productivity measures.
Growth Rates of K1P (=GVA/FC) and K2P (=NVA/FC) of 2-digit Industries in 1956-95

Table: 4. 3.1

Growth Rates of K1P and K2P of 2-digit Industries in 1956-95 (in the order of their rankings)

K1P	**K1P**	**K1P**	**K2P**	**K2P**	**K2P**
Ind Name	Ind No.	gr.rt(des)	Ind Name	Ind No.	gr.rt(des)
OMI	38	9.8	Tex Prd	26	9.600
Tex Prd	26	8.9	OMI	38	8.900
Wood Prd	27	8.6	Wood Prd	27	6.700
Ru-Pet-Co	31	7.4	Tex	25	5.600
Leath.Prd	29	6.5	Leath.Prd	29	5.600
Bever'g	22	5.8	Met.Prd	34	5.400
Met.Prd	34	5.2	Ru-Pet-Co	31	4.900
TransEq	37	5.2	TransEq	37	4.600
Paper	28	4.8	Bever'g	22	5.300
Tex	25	4.8	EGS	41	3.500
MotT	36	4.7	MotT	36	3.100
Chem.	30	3.9	Food Prd	21	2.900
NmMp	32	3.7	Paper	28	2.900
EGS	41	3.6	NmMp	32	1.900
Food Prd	21	3.5	Chem.	30	1.800
Basic MA	33	2.4	Basic MA	33	1.100

Both K1P and K2P give similar results in respect of growth rates and ordering of industries, though differing marginally. Capital Productivity growth of Textile Products (IN26) influenced positively its NVA and GVA growth rates. Similar inferences of positive impact of capital productivity growth rates on NVA and GVA growth rates can be drawn for OMI (IN38), EGS (IN41), Leather (IN29), Wood (IN27), Rubber, Petroleum and Coal (IN31), Beverages (IN22), Transport (IN37), Metal Products (IN34), Chemicals (IN30), Machinery other than transport (IN36), Basic Metals and Alloys (IN33), Paper (IN28), NmMP (IN32), Textiles (IN25)- all nearly but not strictly in that order of industries.

This finding signifies the role of Fixed Capital, its intensity and its Productivity in all registered large, medium and small industries, while increasing scale of operation might influence positively each other's capital, its intensity and productivity, also due to upgraded technology absorption, modernization, forward and backward linkages improved over time of planning and markets for capital (physical and financial) and commodity trade, globalization, liberalization, economic reforms applicable to All Industries without distinctions of process, input or end use bases.

4.3.2 Growth rate of Labor Productivity measured in terms of L1P (=NVA/NW) and L2P (=GVA/NW) for 2-digit Indian Industries in the period 1956-95

Table: 4.3.2
Growth rate of Labor Productivity measured in terms of L1P (= NVA/NW) and L2P (=GVA/NW) in 2-digit Indian Industries in 1956-95 (in the order of their rankings)

L1P	**L1P**	**L1P**	**L2P**	**L2P**	**L2P**
Ind Name	Ind No.	gr.rt(des)%	Ind Name	Ind No.	gr.rt(des) %
OMI	38	19.1	OMI	38	14.4
Tex Prd	26	12.2	Chem.	30	12.5
EGS	41	11.5	MotT	36	12.5
MotT	36	11	Met.Prd	34	12.3
Met.Prd	34	10.6	Tex	25	11.6
TransEq	37	10.5	Tex Prd	26	11.5
Leath.Prd	29	10.1	Paper	28	11.5
Basic MA	33	9.9	EGS	41	11.4
Tex	25	9.7	TransEq	37	11.3
Paper	28	9.4	Basic MA	33	11.3
Chem.	30	9.4	Leath.Prd	29	11.1
Food Prd	21	9.2	Wood Prd	27	10.8
Bever'g	22	9	NmMp	32	10.5
Wood Prd	27	8.9	Ru-Pet-Co	31	10.4
NmMp	32	8.8	Food Prd	21	9.8
Ru-Pet-Co	31	8.1	Bever'g	22	9.4

Labor Productivity (L1P and L2P) contributed to NVA and GVA growth in Other Manufacturing Industries (IN38), Electrical and Non-Electrical Machinery other than

Transport (IN36), Metal Products (IN34), Transport Equipment (IN37), Textile Products (IN26) etc. This contributed to work force growth, these in turn to labor intensity, irrespective of their being distinctive in input base and market base character. This finding is also due to economies of increasing scale of operation of all Registered Industries labor absorption intensity (both skilled and unskilled) and influenced positively by their capital intensity. This analysis leads to the conclusion that scale of operation might lead to both factor intensification and to both factor productivities and in turn to NVA and GVA growth rates in all industries as experienced in India since 1948-50 that includes 35 years of centralized (direct and Indirect) planning regime and two decades of liberalization, globalization, privatization, economic reforms New Economic Policies (Structural Adjustment and Stabilization), Market friendly regime that caused for capital intensification complementary to labor absorption of skilled category.

It is learnt from the earlier analysis of growth rates of industries' size variables, factor intensity and factor productivities in Indian Industries during 1956-95, all being complementary and reinforcing each other without enabling a major distinction between process based or input based industries and market based industries (end-Use) based industries and /or for a choice between centralized planning regulated regime (1950-80) and /or recent two decades of market friendly, liberalization, globalization, privatization. However, all the results of growth rates analysis envisage the significant role and impact of technical progress or TFP in many sectors associated with all industries, sub-sectors during 55 years. Accordingly, analysis is extended to trace growth differentials in TFP measures of Kendrick, Domar and Solow for 2-digit industries in 40 years period i.e. 1956-95.

4.3.3 **TFP Growth Rates measured in terms of Kendrick, Domar, Solow.**

Total Factor Productivity arises only when output growth is more that what is /are contributed growth in each factor input of all inputs/factors together. It means an additional output growth caused by an unknown factor termed Technical Progress that can be/is due to change in combination of inputs or factors or output process change or to technology change. Thus TFP growth is due to Technical Progress in processes or to technology advancement/up-gradation/modernization in technical processes constituted in Industry.

Table: 4.3.3

TFP Growth Rates of Kendrick, Domar, Solow of 2-digit Industries in 1956-95 (in the order of their rankings)

Ind Name	Ind No.	Kendrick(%)	Ind Name	Ind No.	Domar(%)	Ind Name	Ind No.	Solow(%)
Wood Prd	27	9.0	Wood Prd	27	7.3	Ru-Pet-Co	31	2.3
Ru-Pet-Co	31	6.44	Ru-Pet-Co	31	4.17	Tex Prd	26	2.1
EGS	41	4.9	BM&A	33	3.45	EGS	41	1.9
NmMP	32	4.6	Paper Prd	28	2.74	BM&A	33	1.8
BM&A	33	4.5	Tex Prd	26	2.51	TrE&P	37	1.7
Food Prd	21	4.46	Leath Prd	29	2.26	Met Prd	34	1.6
Tex Prd	26	4.32	EGS	41	2.1	MotTr	36	1.5
OMI	38	4.31	MotTr	36	1.94	OMI	38	1.4
Beverage	22	4.28	Food Prd	21	1.91	NmMP	32	1.4
Leath Prd	29	3.84	Beverage	22	1.55	Wood Prd	27	1.3
MotTr	36	3.58	Textiles	25	1.47	Textiles	25	1.3
Met Prd	34	3.51	Met Prd	34	1.43	Paper Prd	28	1.0
TrE&P	37	3.4	TrE&P	37	1.38	Beverage	22	1.0
Paper Prd	28	2.97	OMI	38	1.37	Food Prd	21	1.0
Textiles	25	1.96	Chem	30	1.32	Leath Prd	29	0.8
Chem	30	1.91	NmMP	32	1.11	Chem	30	0.6

Wood Industry (IN27) showed maximum TFP growth rate due to Kendrick (9%) and Domar (7.3%). While its rank has fallen due to Solow at a growth of 1.3%, [this may be due to changing current year weights in Solow different from the comparable fixed base year weights in Domar and Kendrick formula] the highest TFPG was reached by Rubber Petroleum and Coal Industry (IN31) at 2.3%. IN31 was in second position in Kendrick and Domar. Growth in TFP differed due to three authors' measures in Non-Metallic Mineral Products (IN32), Wood (IN27), Transport (IN37).

The lowest TFP growth was seen in Chemicals (IN30), Textiles (IN25). While Chemicals was a sunrise industry, Textiles growth spurted in 1970s and 1980s. Since Chemicals being a capital- intensive industry does have further scope to raise growth; it thus may become a 'leading' industry if TFPG can be further exploited. Textiles (IN25) is subject to further capital injection and efficiency as this being a Labor-intensive industry and is actually the highest in rank in capital intensity in our study, hence is a cause for growth.

Ambiguous or inconsistent result is seen in Paper (IN28) and Food (IN21).

Paper Industry (IN28) had good growth due to Domar but, along with Beverage, Food, all three being labor intensive, and less relatively capital intensive in our study, showed scant TFP growth due to Solow. Managerial deficiencies are likely prime reason for low TFPG in labor intensive industries. The culture of high labor turnover, holidays, seasonal character of agriculture both in food crops and cash crops, high disguised unemployment in agriculture, high population and dependency burden, all these mar rise in productivity in these L-intensive industries.

Wood Industry (IN27) TFPG is highest in Kendrick and Domar. As wage rates in forest based products are abysmally low and tribal population being a high %tage of total population in India, cost of procurement of forest produce for Wood Industry is very low and consequently, the value attached to growth in money terms turned out to be high.

Rubber Petroleum and Coal (IN31) showed High TFPG, this being a high K intensive industry and petroleum being found short in extraction leading to high prices may not be able to meet high demand growth and its capacity to act as a leading sector in India's economic and industrialization may be limited.

Electricity, Gas and Steam (IN41) showed higher growth well but will need further power reforms with greater decentralization and expansion. Textile Products (IN26) need input-output linkages between Textiles and Textile Products, with their capital intensity providing a case for augmenting Labor intensity and for capturing Asian, European and American markets. Basic Metals and Alloys (IN33) is also another promising Intermediate industry can be another leading industry if wage costs are kept down at reasonable levels. Smaller states are coming up and demand in those directions increasing, Basic Metals and Alloys (IN33) will be one of the best leading Industries for growth in Indian Industry and economy followed by Other Manufacturing Industries (IN38) and Electrical and Non Electrical machinery other than Transport (IN36).

Transport Equipment (IN37) and Metal Products (IN34) though not causing alarm, can raise themselves up to serve as effective channels of growth.

4.4 This Section deals with results and analysis of relative rankings of industries in terms of growth rates of Factories, Employment, Fixed Capital, Net Value Added, Gross Value Added vis-à-vis All Industries growth rates in the corresponding variables.

Table 4.4
Ranking of Industries in terms of growth rates of Factories, Emp, FC, NVA, GVA vis-à-vis All Industries growth Rates in the corresponding variables (in the order of higher to lower for each variable growth rates)

Fact	Fact	Fact	Emp	Emp	Emp	FC	FC	FC	NVA	NVA	NVA	GVA	GVA	GVA
I..Name	Ind No	$\hat{\beta}$	I.Name	Ind No	$\hat{\beta}$	I.Name	Ind No	$\hat{\beta}$	I.Name	Ind No	$\hat{\beta}$	I.Name	Ind No	$\hat{\beta}$
Food	21	33.1	Food P	21	14.7	EGS	41	14.4	EGS	41	18.1	EGS	41	18.1
Leath.	29	19.2	Ru-P-Co	31	7.7	B.M&A	33	12.7	Tex Prd	26	17.2	Tex Prd	26	17.2
Met.Prd	34	18.9	Bev	22	7.1	Chem	30	12.4	Leather	29	17.1	Leather	29	17.1
Tex	25	17.5	Leather	29	6.9	MotT	36	11.8	Bev	22	15.9	Bev	22	15.9
Ru-P-Co	31	14.5	EGS	41	6.7	Leather	29	11.4	Ru-P-Co	31	15.9	Ru-P-Co	31	15.9
Bev	22	12.6	Tex.Prd	26	5.1	NmMP	32	11.2	MotTr	36	14.9	MotTr	36	14.9
MnMP	32	10.4	Tr.Eq	37	4.3	Bev	22	10.7	Tr.Eq	37	14.9	Tr.Eq	37	14.9
Paper	28	10.1	B.M&A	33	3.9	Ru-P-Co	31	10.9	OMI	38	13.1	OMI	38	13.1
Trs Eq.	37	9.4	NmMP	32	4.3	All-Indus	All-Indus	10.5	All-Indus	All-Indus	13.9	All-Indus	All-Indus	13.9
Chem	30	9.2	MotT	36	3.9	Tr.Eq	37	10.4	B.M&A	33	13.7	B.M&A	33	13.7
Wood	27	9.2	Chem	30	3.8	Paper	28	10.4	Met.Prd	34	13.7	Met.Prd	34	13.7
B.M&A	33	8.8	Paper	28	3.8	Tex	25	10.2	Paper	28	13.3	Paper	28	13.3
All-Ind	All-Ind	8.8	All-Indus	All-Indus	3.2	Food P	21	9.7	Chem	30	13.2	Chem	30	13.2
EGS	41	1.2	Met.Prd	34	3.1	Met.P	34	8.3	NmMP	32	13.2	NmMP	32	13.2
OMI	38	5.8	Tex.	25	2.3	Tex.Prd	26	7.6	Food P	21	12.6	Food Prd	21	12.6
Tex Prd	26	7.7	Wood	27	2.2	OMI	38	5.1	Wood	27	11.1	Wood	27	11.1
MotT	36	7.9	OMI	38	1.8	Wood	27	4.4	Tex.	25	10.1	Tex.	25	10.1

Food Products (IN21) and Electricity, Gas and Steam (IN41) tops the rankings of concerned variables such as Factory growth rate, Workers, Fixed Capital, NVA, GVA of Industries vis-à-vis All India Industries, though first two variables and latter three variables grew in opposite ways.

EGS Industry tops rank in FC, NVA, GVA but is ranked 13th in factory growth rate and 5th in Employment (NW) growth rate. EGS being capital intensive does well in output growth rates that were fuelled by higher Fixed Capital Input.

Food Products (IN21), a Labor Intensive Industry did grow well with high employment (NW) growth particularly due to horizontal, decentralized spread of factories though NVA and GVA of IN21 was low due to lower productivities even with increasing capital, both Fixed and Productive. Measures to improve Labor productivity will go a long way to improve NVA and GVA growth rates.

Next in order of rankings in NVA growth were, Textile Products, Leather, Beverages, Rubber, Petroleum and Coal. Textile Products being a labor Intensive Industry had shown remarkable consistency in showing higher Labor productivity growth of both L1P and L2P and in turn particularly of Labor Productivity (L1P) on employment Growth rate. Despite a lower FC growth rate rankings, those industries had high ranks of NVA and GVA growth rate.

Though Leather (IN29) and Beverage (IN22) are traditionally Labor Intensive Industries, they had FC growth more than Factories growth that propelled to higher output growth rankings. Rubber, Petroleum and Coal (IN31) being Capital-Intensive had higher Output growth ranks due to higher FC growth. Employment Growth rates in Rubber, Petroleum and Coal (IN31) and in Transport Equipment (IN37) raised NVA and GVA growth rates in these industries due to their higher Capital Intensities and TFPG.

However, lower growth rates in some Intermediates and Consumer Goods industries were due to low factor productivities and low TFP growth.

The desired need and rational principle lie in both capital and skilled and unskilled labor intensification in all industries of all states, union territories and in their rural backward regions as to minimize unemployment underemployment, regional disparities and to increase industrial growth of small, medium and large scale industries, with high linkages [forwards and backward,] of ancillary and parent units that provide wage goods to reduce inflation, poverty, inequality. Next in importance come the capital goods, Basic Goods and Intermediates to enable high rate of capital formation, economic growth and development followed by household durable consumer goods, house construction materials, electricity gas and water supplies to households of lower middle income, and to enhance levels of living of masses. Durable goods of the elite, top rich group consumption in five star hotels, scandals of brokers, speculators, politicians, top bureaucrats and corporate managers and professional executives in governments and MNCs Business Houses, Banks, Companies, etc should receive the lowest priority.

Industrial and Trade Policies should address to issues pertaining to generation of employment of labor, balanced regional development, even distribution of assets, income work opportunities to all in India to meet social and economic goals of Five year Plans. The current decades export led import liberalization strategies of industrialization, and need for reduction of brain drain and skills trained at huge costs in higher education in India that fetches better growth and amenities for developed countries at cost of underdeveloped ones.

4.5 Causal Relations to Influence TFP Growth, GVA, NVA, Employment Growth and their Determinants in Indian Industries.

This Section 4.5traces the causal relations between TFP Growth, GVA and NVA Growth and each one's determinants through estimated linear regressions of TFP= f (K/L), NVA =f(TFP), GVA= f(TFP), GVA= f(labor Productivity), NVA = f(Labor Productivity), GVA = f (Capital Productivity), GVA= f (Capital Intensity), NVA= f (K/L), NVA= f(Capital Productivity), Employment (NW)= f (K/L), NW= f(TFP), NW= f(Labor Productivity), NW= f(Capital Productivity). TFP is of Solow as mentioned earlier.

4.5.1 Analysis of Influence of Capital Intensity (K/L) on TFP of Solow

Table: 4. 5.1

Growth in TFP of Solow in response to capital intensity for 1956-95

Industry Name	Industry Number (IN)	$\hat{\beta}$
Beverages	22	24.861
Textile Products	26	12.461
Wood and Wood products	27	11.22
Textiles (23+24+25)	25	10.575
Leather and Leather Prd.	29	10.549
Food Products	21	8.613
Metal Products	34	6.097
Other Manf. Industries	38	4.879
Electricity, Gas and Steam	41	4.45
Transport Equip. Parts	37	3.941
Paper and Paper Products	28	3.778
Machinery o.t. Transport	36	3.704
NmMP	32	2.927
Chemicals	30	2.288
Rubber-Petroleum & Coal	31	1.75
Basic Metals and Alloys	33	1.102

The TFPG influenced by Capital Intensity were in Beverages (IN22) at 24.861%, followed by Textile Products (IN26) at 12.461% and Wood Products (IN27) at 11.22%, Textiles at 10.58%, leather Products at 10.55%, then followed by Food Products (IN21) at 8.6 followed by Metal Products (IN34) at 6.097% and Other Manufacturing Industries (IN38) at 4.879%.

The influence of Capital Intensities on TFPG were lower in Electricity, Gas and Steam (IN41) at 4.46% followed by Transport Equipment (IN37) at3.94%, Paper (IN28) at 3.77% and Machinery other than transport (IN36) at 3.7% with Non metallic Mineral Products at 2.93%, Chemicals at 2.99% and Rubber, Petroleum and Coal at 1.75%, followed by the lowest in Basic Metals and Alloys (IN33) at 1.1%. These findings are contrary to usual notion that higher the capital intensity growth higher will be the TFPG in capital intensive industries, followed by less influence in Intermediates and very much less TFPG in consumer goods industries. However, the empirical verification indicated contrary results that consumer goods like Beverages, Textile Products, Wood Products, Textiles, Leather products, Food Products, EGS, OMI TFP growth were influenced better by their capital intensity than in capital goods and intermediate goods Industries in India which is a welcome trend to clear wage goods shortages.

4.5.2 Influence of TFP on NVA, GVA and Employment in Indian Industries for 1956-95

Growth in NVA and GVA in response to TFP by Solow

Table: 4.5.2.1 Growth in NVA and GVA in Response to TFP by Solow for 1956-95

NVA= a +b (TFP); GVA= a +b (TFP)

NVA	**NVA**	**NVA**	**GVA**	**GVA**	**GVA**
Ind Name	INCode	$\hat{\beta}$ in NVA	Ind Name	INCode	$\hat{\beta}$ (GVA)
EGS	41	2.557	Met. Prd.	34	1.914
Tex	25	2.484	Beverage	22	1.816
MotTr	36	2.466	OMI	38	1.576
BM&A	33	2.436	Leather	29	0.806
Ru-Pet-Co	31	2.433	Mac.otTr.	36	0.768
Food	21	2.354	Transport	37	0.626
Chem	30	2.351	R-Pet-C	31	0.579
TrEq	37	2.335	Food Prd	21	0.528
NmMP	32	2.24	Paper	28	0.526
Paper	28	2.215	EGS	41	0.519
Met Prd	34	2.179	NmMP	32	0.462
Bev	22	2.138	Chemical	30	0.45

OMI	38	1.977	Bas M&A	33	0.434
Tex.Prd	26	1.846	Textiles	25	0.426
Wood	27	1.846	Tex Prd	26	0.357
Leather	29	1.773	Wood Prd	27	0.118

Electricity, Gas and Steam (IN41) NVA growth had maximum influence of TFP growth (Solow) with b^ at 2.557 followed by Textile (IN25) at 2.48 and then by Electrical and Non-Electrical Machinery Other Than Transport (IN36)) at 2.47, Basic Metals and Alloys (IN33), Rubber, Petroleum and Coal (IN31) in that descending order.

The lowest influence was revealed in Leather (IN29) where b^ was the lowest at 1.77, only preceded by Wood (IN27) and Textile Products (IN26) at 1.85.

Influence of TFPG on GVA growth had the maximum influence in Metal Products Industry (IN34), followed by Beverages (IN22). However, Leather takes the 4th position whereas Electricity, Gas and Steam (IN41) takes the 10th position.

Wood (IN27) and Textile Products (IN26) had the lowest influences of TFPG on growth of both output (GVA and NVA) measures.

Analysis of Influence of TFP on employment of 2-digit Industries for 1956-95

Table: 4.5.2.2. Growth in Employment in Response to TFP in 2-digit Industries for 1956-95

Ind.Name	Ind	$\hat{\beta}$
Metal Prd	34	1.612
MotTr	36	1.425
Beverage	22	1.372
Chem	30	1.309
Food	21	1.249
Ru-Pet-Co	31	1.047
OMI	38	0.739
EGS	41	0.682
Leather	29	0.583
Tex.Prd	26	0.553
NmMP	32	0.374
Tr.Eq	37	0.361
Textiles	25	0.241
Paper	28	0.145
BM&A	33	0.106
Wood	27	0.092

The influence of TFP on employment growth measured in terms of number of workers (NW) was the highest in case of Metal Products (IN34), followed by Manufacturing other than Transport (IN36) and Beverages (IN22). So TFP influence for raising employment growth is imperative both in capital intensive and labor intensive industries. The lowest influence is seen in case of Wood (IN27) followed by steadily better in case of Basic Metals and Alloys (IN33), Paper (IN28), Textiles (IN25) employment growth in these industries.

4.5.3 Analysis of Influence of Capital Productivity on Gross Value Added, NVA and Employment in Indian Industries for 1956-95

Table: 4.5.3.1.

Growth in GVA in response to capital productivity

Ind.Name	In	$\hat{\beta}$
NmMP	32	1.64
Paper	28	1.581
Beverage	22	1.135
Leather	29	0.971
Food Prd	21	0.803
Chem	30	0.768
Ru-P-Co	31	0.559
OMI	38	0.557
Textile	25	0.476
MotTr	36	0.44
Metal Prd	34	0.318
Tr.Eq	37	0.315
Tex.Prd	26	0.266
BM&A	33	0.18
Wood	27	0.067
EGS	41	0.041

The influence of capital productivity on growth of GVA was the highest in case of non-metallic mineral products (IN32), followed by Paper (IN28), Beverage (IN22), Leather

(IN29) and Food (IN21), Chemicals (IN30), Rubber, Petroleum and Coal (IN31) and Other Manufacturing Industries (IN38).

The lowest influence of capital productivity on GVA growth was seen in case of Electricity, Gas and Steam (IN41), inspite of its capital intensity. Similarly, Textile products (IN26) and Transport Equipment (IN37) are also on the lower side, inspite of capital intensity of IN37 and Labor Intensity of IN26.

Analysis of Influence of Capital Productivity on Net Value Added (NVA)

Table: 4.5.3.2.
Growth in NVA in response to Capital Productivity in 2-digit Industries for 1956-95

Ind. Name	Ind	$\hat{\beta}$
Beverage	22	1.511
Leather	29	1.275
Ru-Pet-Co	31	1.162
Paper	28	0.972
Food	21	0.87
Met.Prd	34	0.834
Chem	30	0.75
OMI	38	0.686
BM&A	33	0.482
NmMP	32	0.32
Tex.Prd	26	0.293
Textiles	25	0.232
Wood	27	0.079
Tr.Eq	37	0.065
MotTr	36	0.064
EGS	41	0.048

The influence of capital productivity on NVA was maximum in case of Beverages (IN22), followed by Leather (IN29), Rubber, Petroleum, and Coal (31), Paper (IN28) and Wood (IN27), followed by Metal Products (IN34), Chemicals (IN30), Other Manufacturing Industries (IN38), Basic Metals and Alloys (IN33) and Non-Metallic Mineral Products (32) respectively in descending order.

Analysis of effect of Capital Productivity on Industries' Employment for the period 1956-95

Table: 4.5.3.3.

Growth in Industries' employment (NW) in response to capital productivity in Indian Industries for 1956-95 (in Descending Order)

Ind. Name	Ind.	$\hat{\beta}$
Leather	29	1.375
Beverage	22	0.924
Ru-Pet-Co	31	0.477
Food	21	0.396
Paper	28	0.383
NmMP	32	0.373
MotTr	36	0.33
Textiles	25	0.318
Chemicals	30	0.316
BM&A	33	0.281
Wood	27	0.098
OMI	38	0.096
Metal Prd	34	0.079
Tex.Prd	26	0.063
EGS	41	0.058
Tr.Eq	37	0.058

Leather (IN29) shows the maximum influence of capital productivity on growth rate of employment (NW) followed by Beverages (IN22), Rubber-Petroleum and Coal (IN31) and Food (IN21) in descending order. So, employment in Labor -intensive industries also need to be enhanced through increase in efficiency of capital productivity.

Chemicals (IN30) takes the 9^{th} position, followed by Basic metals and Alloys (IN34) and Wood (IN27).

The lowest influence was in Electricity, Gas and Steam (IN41) and Transport Equipment (IN37), showing b^ of 0.058.

4.5.4 Analysis of Influence of Capital Intensity on Gross Value Added, NVA and employment in Indian Industries in 1956-95:

Table: 4.5.4.1

Growth in GVA in response to Capital Intensity in Indian Industries for 1956-95:
(in Descending Order)

Ind.Name	I.N.	$\hat{\beta}$
EGS	41	1.346
Tex.Prd	26	1.296
Leather	29	1.272
OMI	38	1.255
Tr.Eq	37	1.229
MotTr	36	1.128
Beverage	22	1.051
NmMP	32	1.001
Food Prd	21	0.991
Paper	28	0.982
Textiles	25	0.925
Wood	27	0.821
Chem	30	0.682
Ru-Pet-Co	31	0.556
BM&A	33	0.547
Metal Prd	34	0.475

The influence of capital intensity on growth of output in terms of GVA is the highest in case of Electricity, Gas and Steam (IN41), followed by Textile Products (IN26), Leather (IN29) and Other Manufacturing Industries (IN38) in that descending order.

The least influence is seen in Metal Products (IN34).

Capital intensive industries such as Chemicals (IN30), Rubber-Petroleum and Coal (IN31) and Basic Metals and Alloys (IN33) show least influences of capital intensity on GVA growth.

Analysis of effect or influence of Capital Intensity on Net Value Added:

Table: 4.5.4.2

Influence of KI_2 (FC/NW) on Net Value Added (NVA) in each of the 2-digit Industries for 1956-95 (in Descending Order)

Ind.Name	I.N.	$\hat{\beta}$
Leather	29	1.346
Tex.Prd	26	1.32
EGS	41	1.19
Tr.Eq	37	1.16
OMI	38	1.088
Beverage	22	1.077
MotTr	36	1.059
BM&A	33	1.03
Food	21	1.002
NmMP	32	0.927
Metal Prd	34	0.871
Wood	27	0.854
Textiles	25	0.792
Paper	28	0.767
Chem	30	0.63
Ru-Pet-Co	31	0.565

The growth in NVA is most influenced by capital intensity in case of Leather (IN29), followed by Textile products (IN26), Electricity, Gas and Steam (IN41).

Food (IN21) occupies 9^{th} position in the descending scale. Beverages (IN22) is 6^{th} while, Chemicals (IN30) is 15^{th}. The lowest position is in Rubber-Petroleum and Coal (IN31) i.e. is in 16^{th} position.

Analysis of Influence of Capital Intensity on Employment

Table: 4.5.4.3
Growth in employment (NW) in response to capital intensity for 2-digit All India Industries for 1956-95 (in Descending Order)

Ind.Name	Ind	$\hat{\beta}$
Tr.Eq	37	1.161
Tex.Prd	26	0.656
Ru-Pet-Co	31	0.646
EGS	41	0.515
Leather	29	0.501
Beverage	22	0.418
OMI	38	0.412
NmMP	32	0.386
Metal Prd	34	0.353
Paper	28	0.349
BM&A	33	0.264
Chem	30	0.229
Food	21	0.224
MotTr	36	0.149
Wood	27	0.055
Textile	25	0.041

Transport Industry (IN37) shows maximum growth in employment (NW) in response to capital intensity with b^ showing 1.16, followed by Textile Products (IN26) and Rubber, Petroleum and Coal Industry (IN31). So capital intensity is important for employment growth even in capital intensive industries as in IN37 and IN31. The need of K/L increase in EGS is also vindicated here even in context of need for higher employment growth.

The lowest influence of capital intensity on employment (NW) growth is in textiles (IN25). Wood (IN27) and Manufacturing other than transport (IN35+36=36) also show low influences of capital intensity on employment growth. Thus the need of the textile sector for employment increase is less on raising in capital intensity.

4.5.5 Analysis of Influence of Labor Productivity on Net Value Added, GVA and Employment- Analysis is done here for Results showing growth in NVA, GVA and NW due to the influence of Labor Productivity.

Table: 4.5.5.1.

Growth in Industries output (NVA) in response to L-productivity for 2-digit Industries for 1956-95

Ind.Name	Ind	$\hat{\beta}$
Ru-P-Co	31	1.727
Tex.Prd	26	1.372
Beverage	22	1.284
OMI	38	1.263
Leather	29	1.248
Tr.Eq	37	1.189
Met Prd	34	1.166
Paper	28	1.157
MotTr	36	1.129
BM&A	33	1.12
NmMP	32	1.034
Wood	27	1.025
Textile	25	0.969
Food Prd	21	0.855
Chem	30	0.739

The influence of labor productivity on NVA growth rate was the maximum in case of Rubber-Petroleum and Coal (31), followed by Textile Products (IN26), Beverages (IN22) and Other Manufacturing Industries (IN38). The lowest influence is in Chemicals (IN30) as it was in case of influence of labor productivity on GVA growth rate. Food Industry, Textile, Wood also showed lack of influence of labor productivity on NVA growth, these being L-intensive industries.

Influence of Labor Productivity on GVA Growth in Indian 2-digit Industries for 1956-95

Table: 4.5.5.2

Growth in GVA in Response to Labor Productivity for Indian Industries for 1956-95 (in Descending Order)

Ind.Name	IN	$\widehat{\beta}$
OMI	38	1.331
Transport	37	1.261
EGS	41	1.246
Tex.Prd	26	1.221
Met.Prd	34	1.203
Beverage	22	1.197
Paper	28	1.158
Leather	29	1.15
M.ot.Tr	36	1.107
Textile	25	1.086
Ba.M&A	33	1.078
NmMP	32	1.06
Wood	27	1.026
Chemical	30	0.989
Food Prd	21	0.756
Ru-P-Co	31	0.661

Other Manufacturing Industries (IN38), Transport Equipment (IN37), EGS (IN41) though capital Intensive, the growth rates in GVA were influenced to the maximum by their Labor Productivities. Food products assumed the 15th Position, though it is a Labor Intensive Industry. Its productivity is not a concern for units selling in a local market Rubber, Petroleum and Coal (IN31) showed the lowest influence of Labor productivity on GVA growth, being a Capital Intensive Industry.

Analysis of influence of Labor Productivity of 2-digit Industries on Employment for 1956-95

Table: 4.5.5.3.
Growth in Industries' employment (NW) in response to Labor productivity in 2-digit Industries for 1956-95

Ind.Name	Ind	$\hat{\beta}$
Leather	29	0.697
Tex.Prd	26	0.648
Ru-Pet-Co	31	0.483
NmMP	32	0.396
EGS	41	0.379
Chemical	30	0.378
Beverage	22	0.361
Paper	28	0.352
OMI	38	0.324
Food	21	0.318
MotTr	36	0.309
Metal Prd	34	0.288
BM&A	33	0.283
Tr.Eq	37	0.166
Wood	27	0.072
Textiles	25	0.013

The influence of labor productivity on employment (NW) growth was the maximum in case of Leather (IN29), followed by Textile Products (IN26) and Rubber-Petroleum and Coal (IN31). Food (IN21) takes 10th position.

The least influence was in Textiles (IN25), though this is a L-intensive industry. Its Employment growth recorded a low figure too. Transport Equipment (IN37) and Wood (IN27) also showed low influence of L-productivity on growth of employment in terms of NW. These two need more infusion of capital and greater increase of capital productivity and TFP.

4.6: Analysis of Returns to Scale through Cobb-Douglas Production Function Estimation for 2-digit Industries for 1956-95.

Returns to Scale is an aggregate performance of Factors and Inputs in terms of sum of output elasticities of factors and inputs whichever are employed and contributed to output. These elasticities are independent of their scale, origin and Unit (s) measurements, hence the sum, each being a pure number can be obtained by adding them. Thus we get >1(IRS), <1(DRS) and =1(CRS)

Table: 4.6.

1956-95	1956-95	1956-95	1956-95	1956-65	1956-65	1966-75	1966-75	76-85	76-85	1986-95	1986-95
Ind. Name	IN	a+b	Ind.Name	IN	a+b	IN	RS	IN	a+b	IN	RS
Textiles	25	1.88	Tex.Prd	26	5.13E+00	33	3.8	33	4.34	31	7.69
Chemical	30	1.777	Leather	29	1.48E+00	25	2.68	41	2.67	32	5.61
NmMP	32	1.646	Beverag	22	1.44E+00	28	2.54	36	2.6	28	4.68
Mac.Ot.T	35+36	1.346	NmMP	32	1.33E+00	26	2.15	25	2.35	36	3.28
MetalPrd	34	1.309	Chemical	30	1.18E+00	22	1.13	31	2.33	25	2.81
Food	20+21	1.286	Textile	25	1.13E+00	27	1.55	27	2.3	30	2.76
Transpor	37	1.24	MetalPrd	34	1.06E+00	38	1.84	34	2.12	27	2.17
Wood	27	1.239	Food	21	1.05E+00	34	1.7	30	1.79	33	1.8
OMI	38	1.2	Paper	28	9.66E-01	32	1.52	38	1.69	34	1.79
EGS	40+41	1.197	Transport	37	9.18E-01	30	1.51	32	1.67	41	1.67
Tex. Prd.	26	1.157	EGS	41	8.94E-01	36	1.48	29	1.42	29	1.41
Leather	29	1.123	Wood	27	7.98E-01	21	1.41E+0	26	1.19	26	1.38
Beverag	22	1.11	Mac.ot Tr.	36	7.21E-01	29	1.24	37	1.22	37	1.32
Paper	28	1.0581	Bas M&A	33	6.84E-01	31	1.19	22	1.06	21	1.27
Ru-P-Co	31	0.808	OMI	38	6.24E-01	41	1.15	21	0.699	38	1.1
Bas.M&A	33	0.57	Ru-P-Co	31	5.97E-01	37	0.767	28	0.601	22	0.818

Note: IRS- Increasing returns to Scale. CRS- Constant Returns to Scale. DRS- Decreasing returns to Scale.

Increasing returns to scale in 40yr period 1956-95 was noted by Textiles (IN25), followed by Chemicals (IN30), Nonmetallic Minerals (IN32) and Machinery other than transport (IN36), Metal Products (34), Food (21), Transport Equipment and parts (37), Wood (27), Paper (28) in descending order. But scale economies do not necessarily reflect growth in NVA, GVA or Employment growth or factories growth rate. Thus scale economies are a factor for entry and exit of firms in the industry. The rest of the industries had constant returns to scale (CRS).

The decades show temporal shifts in the industries' relative scale economies. Textiles (IN25) was 6th from above in descending order, but it shifted to 5th position in 1966-75. In the next two decades it got relegated to 5th and 6th position respectively. Thus Textiles has been reaping scale economies constantly and the recession period did not dampen scale economies.

In the period 1956-65, Textile Products (26), Leather and Leather Products (29), Beverages (22), Non-Metallic Mineral Products (32), Chemical and Chemical Products (30), Textiles of Cotton, Wool, Silk and Jute (25), Metal Products (34) and Food Products (21) showed increasing returns to scale, rest showing constant returns to scale.

In the second decade, all showed increasing returns except Transport Equipment and Parts Industry (IN37) that showed Constant Returns to Scale (CRS).

In the 3rd decade, Basic Metals and Alloys (33), Electricity, Gas and Steam (41), Machinery other than Transport (36), Textiles (25), Rubber-Petroleum and Coal (31), Wood and Wood Products (27), Metal Products (34), Chemical and Chemical Products (30), Other Manufacturing Industries (38), Non-Metallic Mineral Products (32), Leather (29), Textile Products (26), Transport Equipment (37), Beverages (22) showed Increasing Returns to Scale. Food Products (21) and Paper (28) showed Constant Returns to Scale(CRS).

In final decade, Rubber-Petroleum and Coal (31), Non-Metallic Mineral products (32), Paper (28), Machinery other than Transport (36), Textiles (25), Chemicals (30), Wood (27), Basic Meals and Alloys (33), in fact all, except Beverages (22) showed Constant Returns to Scale (CRS).

The perennially low scale economies were in Basic Metals and Alloys (IN33) and Rubber, Petroleum and Coal (IN31), Beverages (IN22) and Other Manufacturing Industries (IN38). Basic Metals though did show high scale economies during 1966-85 and slipped back in the last decade due to onslaught of economic reforms that left this industry to fend for its own, this being an Intermediate Industry.

Food, Leather, Metal Products, Textiles show high scale economies in the first decade, but Food slipped into DRS in 1976-85.

4.7 Major Findings and Conclusion:

An Analysis of Growth Rates of Factories revealed Food Products Industry (IN21) growing at a maximum growth rate of 33.1%, followed by User and intermediates Industries. The Comparative Study of Industries' growth rates of Factories brought out possible weak forward and backward linkages and lack of implementation in terms of numbers corresponding to planning goals.

Net Value Added (NVA) growth rate was the highest in Electricity, Gas and Steam (EGS) at 18.1% followed by growth rate on Textile Products (IN26), with lowest growth rate being recorded by Textiles (IN25), indicating lack of appropriate production planning and weak linkages.

Low growth rates in employment in number of workers in most of the industries except Food Products Industry (IN21) confirmed that most industries in India are low labor intensive ones. Low employment growth rate figures n Beverages (2.2%), Textiles (2.3%) and OMI (1.8%) pointed to lacunae in employment planning and thereby hinted at greater employment absorption capacity.

Growth Rate in Fixed Capital (FC) was the highest in Electricity, Gas and Steam (IN41) that is also inferred to be the cause of recording highest NVA growth rate in EGS (IN41). But Intermediates showed low FC growth rate and bolstering FC in these with proper Regional Input Output Planning can alter the overall investment climate.

The highest growth in Capital Intensity was shown in Textiles (IN25) and Capital productivity Growth Rate in Textile Products (IN26) influenced positively its NVA and GVA growth rates. Higher Labor Productivity growth rates in many industries (OMI recorded the highest) contributed to work force growth and in turn to labor intensity, hinting at scale operation leading to both factor intensification and factor productivities and that in turn to

NVA and GVA growth. All these results envisaged greater role for Total Factor Productivity (TFP).

TFPG was the maximum in Wood Industry (IN27) and with Chemicals (IN30), Textiles (IN25) and Basic Metals (IN33) also showing higher growth rates, meant Smaller States can grow faster.

Ranking revealed that Food and EGS ranked high in Factories and NW growth rates. Textiles showed remarkable consistency in both Labor Productivity and Employment growth rates. Leather and Beverage, though Labor Intensive, had high FC growth rate that contributed to high output growth.

A Causal Analysis showed highest TFPG due to K/L was in Beverages, but lowest in Basic Metals, contrary to common understanding. Influence of TFPG on NVA showed maximum influence in EGS (IN41), followed by Textiles (IN25) and Machinery other than Transport (IN36). On GVA growth, maximum influence of TFPG was in Metal Products (IN34), followed by Beverages (IN22) and OMI (IN38). Similarly, TFP influence on Employment growth rate showed maximum effect on Metal Products (IN34), followed by Machinery other than Transport (IN36) and Beverages (IN22). Thus TFPG influence was seen in both Labor Intensive and Capital Intensive Industries. Lowest TFPG influence in Output (GVA) and employment growth rates was noticed in Wood (IN27).

Influence of Capital Productivity on GVA was the highest in NmMP (IN32), followed by Paper (IN28), Beverages (IN22) and Leather (IN29). Influence of Capital Productivity on NVA was the maximum in Beverages (IN22), followed by Leather and RPC (IN31). Influence of Capital Productivity on employment was highest n Leather (IN29), followed by Beverages (IN22) and RPC (IN31). So improvement in Capital Productivity may be the key to raising the Labor Intensive-ness of Industries.

Labor Productivity is high in generally those industries were Capital Productivity was low. But highest Labor Productivity influence on NVA was in Transport Equipment (IN37) followed by RPC (IN31). Highest Labor productivity influence on GVA growth was in OMI (IN38) followed by transport Equipment (IN37) and then by EGS (IN41). On Employment, highest influence of Labor Productivity was in Leather (IN29), though Textile Products (IN26) and RPC (IN31) also ranked higher, though it recorded lower figures.

An Analysis of returns to Scale decadal period wise showed that recession did not dampen higher scale economies in Textiles (IN25). In 1966-75, all industries showed IRS except Transport Equipment (IN37). Food slipped into Diminishing Returns to Scale in the third decade of 1976-85. In the fourth decade (1986-95), all industries except Beverages showed CRS. Increasing Returns to Scale in Textiles (IN25), Chemicals (IN30), NmMP (IN32) and MotTr (IN36) in the long run period of 40years. But such scale economies do not necessarily reflect growth in NVA, GVA, Employment, and Factories' growth rates.

Thus despite high growth in Units, to reap scale economies, a proper agricultural environment and high expectations need to be maintained and nurtured which slackened during the decade of New Economic reforms period. Transport is another industry that showed inconsistent scale economies largely due to inadequate planning. Also, higher growth rate in units does not necessarily bring about scale economies. To improve scale economies, an enabling environment, innovative marketing techniques, development of support infrastructure are necessary. These are conspicuous by their absence in a developing economy due to inadequacy of resources for balanced development of industries and of regions/states/districts; rural vs urban diversity and forward vs backward states/regions. Hence, the following Chapters address to regional dispersal of industries, measures and causal factors for regional dispersal vs. growth, TFPG, Capital Intensity, Factor Productivities, Returns to Scale of Industries, etc. Increasing returns to scale in many industries was noted independent of TFPG. This could be due to higher factor productivities, accrued in turn from output elasticities to those factors/inputs, which was again independent of factor intensities and growth rates of Industries concerned. It may be further concluded that TFPG and output growth and factor productivities caused for increasing returns to scale in many and constant returns to scale in a few; but the converse necessarily hold good in the sense that returns to scale may remain independent of TFPG of disembodied (Neutral TP) and embodied type.

Chapter 5

Analysis of Measures of Regional Dispersal of Indian Industries (1956-95) in All States and UT together and separately for Large States and for Small States and UT

5.1 Introduction:

The objective of this Chapter 5 is to analyze the nature and extent of regional dispersal of two-digit industries reflecting dispersion vis-à-vis concentration in India during the forty years of industrialization from 1956 to 1995-6. It brings out trends over time periods of industrial growth or of retrogression during which concentration of industries or of regional dispersal took place, evenly or unevenly. In this context, Perpetuation hypothesis implies that growth in less developed countries might increase concentration and regional disparities, while Williamson hypothesis of industrialization speaks of decrease in regional disparities after a certain period of concentration. But these two hypotheses are not tested empirically in this chapter because the data details are not available at micro-units of industries to connect multi-level space units like districts. However, a meaningful analysis due to industry (two-digit level) group for all large states together and all small states together and All States (large and small) together using State-UT wise data for each industry group is done here.

This chapter is divided into the following sections:

Section5.2 deals with Conceptual and Data details.

Section5.3 deals with Analytical Framework (Review of Analytical Tools).

Section 5.4 deals with analysis of HH and CV results of All States and UT taken together, covering each industry group with respect to each of the variables during 10year periods, followed by a similar analysis of a total of 40years, a similar analysis being done for Small States and UT and for Large States separately.

This would trace and deduce the differences in measures of regional dispersal arising due to each industry over distinct time periods and helps to understand how industrialization is region-specific in the process of growth and development. This in turn helps in drawing policy guidelines and recommendations.

5.2 Conceptual and Data Details:

Measures of regional dispersal of industries are the measures of Hirshman-Herfindahl Index (HHI) and Coefficient of Variation (CV). The states and union territories are taken as units of analysis to measure the dispersal of 2-digit industries of Registered Factory Sector[1]. Summary Results of Registered Factory Sector are provided in the Annual Survey of Industries (ASI) Census Reports and in National Sample Survey (NSS) Sample Part of ASI Reports published by the Central Statistical Organization (CSO). This database is reproduced in the Economic and Political Weekly (EPW) Research Foundation Reports (ASI Census and Sample Part.

1.The ASI data covers all factories registered under Sections 2m (i) and 2m (ii) of the Factories Act of 1948, i.e. those employing 10 or more workers with the aid of power; and those employing 20 or more workers without the aid of power, respectively, on any day of the preceding 12 months.

1- The ASI covers bidi and Cigar Workers Act 1966, Registered Factories. employing 10 or more and using power and 20 or more if not using power.

2- All the electricity undertakings registered with the CEA are covered under ASI irrespective of their employment size. Certain services and activities like cold storage, water supply and repair of motor vehicles and of other consumer durable like watches are also covered under the ASI (pages 19 &20, Ch-3, EPWRF).

For the purposes of ASI, Census of factories were surveyed that consisted of employing50 or more workers and using power, and those employing 100 or more workers but not using power. Besides, all the electricity undertakings irrespective of their of their size of employment, as also Bidi and cigar establishments were enumerated on census basis. The remaining factories, i.e. those employing 10-49 workers and using power, and 20-99 workers but not using power constituted the non-census (sample) sector and were fully covered but over a period of two years. The sample thus constituted 50 percent of the factories each year in such a way that a factory is surveyed every alternate year (page20, Chapter-3, EPWRF).

The two measures of dispersion, i.e. Herfindahl Index (HHI) [2] and Coefficient of Variation (CV) [3] are used to measure regional dispersal of industries in terms of each of the five size variables, viz., Number of factories, Productive capital (PK) as proxy for Capital, Number of Workers as proxy for Labor[4], capital-labor (K/L) for capital intensity and output measured in terms of Net Value Added (NVA) [5], separately.

The 40-year time period is sub-divided into four sub-periods: 1959-1965, 1966-1975, 1976-86 and 1986-1996. 1965-66, 1975-76 and 1985-86 are the break points of very slow growth or trough years of industry. Data for 1956, 1957, 1958 were not uniformly available. Similarly, data for 1971, 1972, 1975, 1977-78 also was not available, hence neglected for analysis. So for the missing data of the states and of all-India in 1970s an averaging two preceding and two succeeding years data was used to interpolate the missing value.

All the factories in ASI frame have been classified into their appropriate industry groups as per NIC 1970 from 1973-74 to 1988-89 and as per NIC 1987 thereafter. Accordingly, classification is done on the basis of values of the principal products manufactured by them. But to comply with the secrecy clause of Collection of Statistics Act, the results of some industry groups were not published. If the number of units is 1 or 2 or 3, they were clubbed with each other for non-identity, except for industry groups 400 and 401 (electricity generation and distribution (p-22, Ch-3, EPWRF[6]).

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2. Sources- Herfindahl O.C., "***Concentration in Steel Industry***". Ph. D. Thesis, Columbia University, M. A. Adelman, "Comments on 'H' Concentration measures and Numbers equivalent: ***Review of Economic and Statistics***- Vol-51, 1969, pp-99-101.

3. The Coefficient of Variation (CV) is a measure of dispersion suggested by Carl Pearson- Sources-**'*Fundamentals of Statistics*'** by S C Gupta, Himalaya Publishing House, Bombay, 1987, p-415-17.

4.Employment was used by F. B Graver, F. M Baddy and A. J Niron in "***The Location of Manufactures in USA***", University of Minnesotalas, Minneopolis, 1933.

5.Value added was used by Linge G.J.R in "Concentration and Dispersal of Manufacturing in New Zealand"[2]- ***Economic Geography***, Vol36-1960, pp-326-343.

6. ***EPW Research Foundation***- Data Base-Annual Survey of Industries-1973-98.

Computation of HH and CV, for all states and union territories (UTs) data were taken together, distinctly from two other groups data, each separately in categories of 17 large states and 12 small states including a few hill states and Union Territories, for each of the five variables. Data for Sikkim and Arunachal Pradesh was not available for all or for most of the years. Data for other hill states of Mizoram, Meghalaya, Nagaland, Manipur; and for coastal & island UTs of Pondicherry, Andaman & Nicobar, Dadra & Nagar Haveli, Daman & Diu, Chandigarh were not available for many initial years of four decades. The newly formed states like Chattisgarh, Jharkhand, Uttaranchal have been excluded.

Section 5.3:

Analytical Framework drawn from a brief review of Studies:

Coefficient of Variation (C.V.) [7] is a relative measure of dispersion, defined as by $\sigma/\ \bar{X}$. It is a pure number, independent of units of measurement and is suitable for comparing the variability as a ratio mean of distributions. Karl Pearson defined it as percentage variation in mean[8]. A smaller CV is understood to mean homogeneous consistency better or more than the other. C.V. is a static ratio method and is useful for comparative statics only.

7-Gupta S.C.- Fundamentals of Statistics, - op. cit. Pp.416

8.Allen, RGD- Statistics for Economists,-pp-110.

The findings and results of dispersal measures is to test the Perpetuation Hypothesis and the Williamson Hypothesis[9] leading to study of linkage effect differences that may lead to policy guidelines. The self-perpetuation hypothesis says that regional disparities widen in the process of development due to concentration of activities in a few pockets. On the contrary, Williamson states that regional inequalities increase in the beginning but ultimately lessen in the course of development. Many studies that test these hypotheses show differing results. Yet this is an extension of Hirshman's unbalanced growth model as explained and empirically tested by VVN Somayajulu[10].

VVN Somayajulu pointed out that in his study of Industrial Development of Andhra Pradesh pattern of change in regional inequalities depend not merely on variables and structural ratios but also on dis-integration of space studies such as districts, Blocks, villages, etc. Somayajulu concludes that India's experience in the 55 years of industrial planning could not decrease regional inequalities and this negated Williamson's hypothesis.

Location coefficients are silent regarding inter-temporal shifts and hence could not form part of our current study. This study intends to establish a link between technical progress, growth rates and dispersal that could provide insights into the processes of industrial development and the changes in industrial equity (regional and individual) and in efficiency of industries.

9-William, Jeffrey, "Regional Inequality and the Process of National Development", ***Economic Development of Cultural Change***, Vol. XIII, No.4, Part-II, pp-3-84, Julu-1965.

10-Somayajulu V V N- ***Industrial Development of Andhra Pradesh-1956-86***, ICSSR Study, University of Hyderabad, Hyderanad-500046; (p-4.3) 1993.

Studies by M.D. Choudhury[11], Venkataramaiah[12] (criticism of Dhar & Sastry), K G Nair[13], C.R Pathak.[14], all pointed out to increasing disparities. However, Dhar & Sastry[15], O. P. Mahajan[16], R.K. Lahiri[17], and Hemlata Rao[18] saw convergence. Ashok Mathur[19] analyzed sectoral disparities for 25 years and stated that initially there is a narrowing down but later inequalities increased. He said that no state except UP contributed to narrowing down. But VVN Somayajulu[20] pointed out that primary sector's disparities (since it originated in rural decentralized sector and out- migration of rural labor activities caused to reduce disparities in rural activities but led to increase disparities in secondary sector activities or urban metropolitan cities) are open to testing at various spatial levels in micro state level industrial development studies as in AP Studies of the author.

11-Chowdhury M.D.- ***Behavior of Spatial Income Inequality in a Developing Economy: India, 1950-70"*** Paper presented at the 9th Conference of the Indian Association for Research in National Income and Wealth- January 1974.

12-Venkataramiah P-"Inter-State Variations in Industry, 1951-1961: A comment"- ***Economic and Political Weekly (EPW)***, 4- August, 1969, pp-1280-1.

13- Nair, K. R. G., " A Note on Inter-State Income Differentials in India-1950-51 to 1960-61***", Journal of Development Studies***, 7 July 1973, pp-441-447.

14-Pathak C. R., "Regional Disparities in Industrial Development in India" Chapter-6, pp-113-124; in the book "*Economic Liberalization and Regional Disparities in India-Special Focus on the North-Eastern region*" edited by A. C. Mohapatro and C.R. Pathak, ***Star Publishing House***, Shillong, 2003.

15-Dhar P. N. and D.U Sastry, "Inter-State Variations in Industry, 1951-61, ***Economic and Political Weekly (EPW)***, 4, March-1969, pp-535-538

16-Mahajan O.P **–** ***Regional Economic Development in India-1950-66***, Ph. D. Dissertation Kurukhetra University, 1972.

17-Lahiri R.K- "Some aspects of Interstate Disparity in Industrialization in India", ***Sankhya***, 31, Series B, Dec. 1969.

18-Rao Hemlata, "Identification of Backward regions and the Study of Trends in Regional Disparities in India", Paper presented at the Regional Imbalances Seminar, ***Indian Institute of Public Administration (IIPA)***, New Delhi, 1972.

19-Mathur Ashok, "Regional Development and Income Disparities n India: A sectoral Analysis-***Economic Development and Cultural Change***, Vol-31 No.3 April 1983, pp-475-505.

20 Somayajulu V V N- op. cit..

5.4 Analysis of results, Findings relating to CV and HH of Variables and Structural ratios of Industry Groups of Large States, All States and Union Territories taken together versus Small States and UTs:

If CV is 1 and less than 0.5, then there is no consistency with respect to regional dispersal of industries. CV= $\sigma/\ \bar{X}$ is a coefficient of variation and inverse of consistency. If CV is>1-1.5 then there is dispersal and if CV is <1-1.5 there is concentration. Then what is desired for dispersal is CV>1 or=1wherein it provides a case for consistency and dispersal but no concentration.

However HH is $\Sigma x_i^2 - (\Sigma x_i)^2$ where x_i is deviation about mean. So if HH is zero (0) then there is no dispersal and no concentration. If HH is >0-0.2, then there is dispersal. If HH is<0-0.2, then there is concentration.

CV results for 12 smaller states (that include Union Territories):

The States and Union Territories taken in this category are Delhi, Chandigarh, Pondicherry, Goa- Daman- Diu, Tripura, Mizoram, Meghalaya, Nagaland, Manipur, Andaman & Nicobar Islands, Dadra & Nagar Haveli, Sikkim (though data could not be consistently available).

Table 5.4.1 Coefficient of Variation (CV) and Herfindahl Index (HI) of Industry Groups in Small States and UTs of India during 1959-65

Sl. No.	I.Nm.& Code	Range	CV Results of Variables or Structural Ratios					HH results of Variables or Structural Ratios				
			Units	PK	Emp	NVA	K/L	Units	PK	Emp	NVA	K/L
1	Food (IN21)	h	3.433	6.994	6.685	7.475	6.994	0.501	0.840	0.810	0.888	0.937
		l	1.404	5.266	3.132	5.892	4.492	0.336	0.719	0.266	0.816	0.369
		m	2.413	6.280	4.421	6.814	6.032	0.446	0.787	0.621	0.850	0.860
2	Textile (IN25)	h	4.949	7.279	7.284	7.844	0.384	0.585	0.901	0.868	0.927	0.689
		l	2.546	2.779	4.603	5.069	0.002	0.545	0.554	0.573	0.667	0.500
		m	3.586	5.815	5.077	6.884	0.166	0.572	0.730	0.656	0.745	0.549
3	M Prd. (IN34)	h	4.342	4.765	5.478	6.523	4.532	0.830	0.849	0.919	0.932	0.849
		l	1.211	1.551	2.322	2.354	1.255	0.755	0.835	0.835	0.869	0.500
		m	1.542	2.859	3.798	3.895	2.658	0.800	0.841	0.889	0.892	0.639
4	Tr. Eq. (IN37)	h	3.211	3.424	4.563	4.585	4.241	0.659	0.619	0.652	0.816	0.504
		l	1.513	1.621	2.211	2.578	1.254	0.409	0.408	0.610	0.746	0.303
		m	2.334	2.354	3.514	3.981	2.754	0.559	0.519	0.631	0.781	0.404

Note: h-highest, l-lowest, m-mean value.

In the period 1959-65, there is sparse results, suggesting that either industry was inadequately and inequitably distributed or data was not consistently available. However, results show that in Food Products Industry (IN20+21), coefficients of variation of Units, employment, productive capital, NVA and K/L are highly dispersed. This means that bulk investments in the form of fixed capital flowing from the state in the form of fixed capital or investment could be easily changed into malleable or working or productive capital by the entrepreneur-farmer-industrialists in this early phase of planned industrialization. The mean values of units being nearer the higher CV figures also supports our above inference. The CV of K/L however shows that capital intensity in this industry was highly dispersed. The HH of all the 5 variables suggests similar inferences, though the results of HH units are not very much different from HH of other variables.

Textiles (IN23+IN24+IN25) comprising cotton, wool, silk, jute are highly dispersed in both CV and HH results, except in CV of capital intensity that shows a value less than 1.
There are HH & CV results for Metal Products (IN 34) and Transport Equipment (IN 37). HH results show that they were highly dispersed over smaller states, though Metal Products (IN34) are the least dispersed among them.

1966 to 1975: (For category of Smaller states)

Table: 5.4.2: Coefficient of Variation (C.V.) and Herfindahl Index (H.I.) of Industry Groups in Small states and UTs of India during 1966-75

		I.Nm.Co	CV Results of Variables or Structural Ratios					HH results of Variables or Structural Ratios				
Sl.No.	Range		Units	PK	Emp	NVA	K/L	Units	PK	Emp	NVA	K/L
1	h	21	3.264	7.537	6.669	8.003	6.216	0.574	0.894	0.719	0.914	0.870
	l	Food	1.697	2.955	2.174	3.930	0.694	0.422	0.507	0.420	0.703	0.163
	m		2.494	5.024	3.658	6.556	3.148	0.501	0.674	0.580	0.847	0.540
3	h	25	6.839	7.516	6.669	5.431	2.785	0.839	0.722	0.589	0.977	0.744
	l	Textiles	1.943	1.217	2.174	2.103	1.003	0.568	0.510	0.174	0.657	0.500
	m		3.604	3.083	3.235	3.336	1.914	0.632	0.590	0.501	0.738	0.563
4	h	27	4.714	7.090	5.737	6.810	2.837	0.654	0.892	0.809	0.822	0.567
	l	Wood	2.771	1.075	1.044	1.195	0.325	0.504	0.428	0.432	0.510	0.161
	m		3.782	2.940	2.431	3.675	1.027	0.590	0.613	0.575	0.610	0.479
5	h	28	2.121	4.928	3.060	4.800	1.227	0.531	0.583	0.514	0.730	0.500
	l	Paper	2.033	1.066	1.058	1.677	1.120	0.315	0.500	0.500	0.520	0.242
	m		2.007	3.236	1.139	2.159	1.170	0.423	0.542	0.507	0.625	0.371
6	h	30	5.142	4.352	5.564	3.321	4.252	0.771	0.592	0.808	0.501	0.486
	l	Chem	2.224	2.542	1.568	1.551	1.325	0.362	0.302	0.513	0.231	0.210
	m		3.542	3.655	2.689	2.15	2.756	0.424	0.364	0.636	0.334	0.329
7	h	31	4.492	8.402	7.264	8.101	7.264	0.640	0.990	0.866	0.956	0.888
	l	Ru,P-C	2.660	4.026	3.894	1.994	3.958	0.381	0.526	0.508	0.389	0.514
	m		3.488	4.143	4.418	5.047	4.418	0.503	0.588	0.657	0.448	0.654
8	h	32	5.010	6.672	6.249	6.506	2.444	0.682	0.952	0.876	0.921	0.523
	l	NmMP	4.243	3.002	1.298	2.697	1.801	0.625	0.563	0.512	0.551	0.416
	m		4.626	4.837	3.774	4.601	2.122	0.436	0.505	0.462	0.491	0.313
9	h	34	6.894	7.308	6.347	7.173	2.700	0.830	0.871	0.800	0.855	0.800
	l	MetPrd	4.075	4.863	4.444	5.389	1.096	0.661	0.800	0.749	0.800	0.255
	m		5.336	6.042	5.461	6.246	1.690	0.768	0.822	0.785	0.825	0.622
10	h	36	7.425	6.660	7.501	8.018	4.933	0.883	0.949	0.939	0.946	0.800
	l	MotTr	5.231	2.083	5.564	1.833	1.122	0.564	0.694	0.564	0.679	0.351
	m		6.407	4.675	6.556	4.975	3.401	0.766	0.811	0.799	0.808	0.672
11	h	37	6.364	5.007	5.690	6.000	3.554	0.705	0.842	0.820	0.899	0.653
	l	Tr.Eq.	3.677	1.478	2.239	1.441	0.422	0.364	0.511	0.535	0.558	0.257
	m		4.820	3.292	4.133	4.576	1.476	0.465	0.641	0.742	0.765	0.432
12	h	41	3.394	8.468	8.183	8.442	7.603	0.580	0.998	0.965	0.995	0.901
	l	EGS	1.697	1.210	5.128	3.675	5.835	0.520	0.510	0.683	0.594	0.736
	m		2.263	3.962	6.241	6.816	6.658	0.540	0.681	0.784	0.857	0.811

A maximum dispersal in Food Industry (IN21) is noticed in NVA both in CV and HH measures, though all other variables show high dispersal too. However, the mean values show a tendency to be nearer to the lowest values of CV and HH in their corresponding variables that shows that higher values are jumps and not in line with the trend movement of dispersal results. But in case of Machinery other than Transport (IN36=35+36) and Other Manufacturing Industries (IN38) the mean values are nearer the higher values. So in this decade, electrical and non- electrical machinery (IN35 and IN36) and OMI did show high dispersal. This could be an offshoot of earlier growth impulses as OMI consists of pharmaceuticals, sports, jewelry related, stationery articles, feather, brooms and badges. The users of products of OMI are often those who could have lags in demonstration affect and manifest of late release of pent-up demands. Even electrical and non-electrical industry spread could be an outcome of two factors. First, it is an outcome of radio communication that reached smaller and rural areas later and so it is no wonder that electrical industry could spread there. The other is more futuristic in character. It was a sort of preparation for the electronic boom that was to spread across in the later decades. There need be little newer explanation for other elements of this industry like agricultural implements, sewing machines, etc. So industrial retrogression has not affected dispersal though Chemical Industry, still to achieve ‘sunrise status’ of 1970s, did show the lowest dispersal, at least in NVA values. This being a capital intensive and heavy industry, it can be said recession did not allow this industry to spread itself regionally, at least the smaller states. However, textiles, wood, rubber petroleum coal, EGS does show less dispersal as mean values are nearer lowest figure. In small states, despite low spread of industry, these industries, both capital intensive and labor intensive could have had a wider role to play, had recession not taken place. In other words, except Electrical and non-electrical machinery, which could be a fringe industry, other industries have been affected by recessionary economic environment.

<u>1976 to 1985 (For Smaller States):</u>

Table: 5.4.3 Coefficient of Variation (C.V.) and Herfindahl Index (H.I.) of Industry Groups in Small states and UTs of India during 1976-85:

Sl.No.	Ind Name	Range	CV Results of Variables or Structural Ratio					HH results of Variables or Structural Ratis				
			Units	PK	Emp	NVA	K/L	Units	PK	Emp	NVA	K/L
1	Food (IN21)	h	2.379	3.863	2.622	4.294	2.703	0.379	0.671	0.456	0.746	0.447
		l	1.758	2.948	2.015	2.023	0.870	0.272	0.505	0.312	0.314	0.174
		m	1.975	3.314	2.296	3.148	1.241	0.307	0.587	0.362	0.551	0.223
2	Bev'ge (IN22)	h	3.361	3.715	4.033	5.896	3.207	0.538	0.538	0.589	0.816	0.476
		l	1.334	1.232	2.125	2.393	1.120	0.277	0.277	0.323	0.359	0.269
		m	2.473	2.183	3.033	3.426	2.284	0.398	0.357	0.446	0.506	0.358

3	Textile (IN25)	h	4.840	5.433	4.728	4.312	4.166	0.669	0.628	0.668	0.765	0.545
		l	2.099	1.489	2.781	1.012	2.236	0.487	0.405	0.472	0.388	0.319
		m	3.097	3.993	3.268	2.363	2.886	0.582	0.517	0.550	0.555	0.437
4	Tex Prd (IN26)	h	8.256	8.416	8.380	8.439	4.814	0.973	0.992	0.988	0.995	0.661
		l	5.402	1.682	3.529	5.773	1.038	0.806	0.520	0.587	0.790	0.401
		m	6.799	6.295	6.480	6.961	2.848	0.916	0.891	0.895	0.946	0.498
5	Wood (IN27)	h	2.022	3.599	3.450	3.541	1.274	0.313	0.644	0.639	0.639	0.212
		l	1.281	2.070	2.058	2.569	0.672	0.189	0.321	0.331	0.396	0.147
		m	1.580	2.897	2.692	2.993	0.979	0.250	0.498	0.448	0.507	0.185
6	Paper (IN28)	h	3.677	3.547	3.311	4.012	1.564	0.706	0.667	0.600	0.670	0.268
		l	3.006	2.848	2.752	3.009	0.855	0.451	0.425	0.409	0.520	0.182
		m	3.311	3.203	2.977	3.395	1.161	0.593	0.566	0.509	0.608	0.203
7	Leather (IN29)	h	7.460	8.202	7.989	8.176	3.993	0.886	0.967	0.943	0.964	0.800
		l	3.494	5.211	4.417	5.442	0.357	0.585	0.741	0.636	0.800	0.501
		m	4.011	5.886	4.525	6.772	1.681	0.772	0.814	0.789	0.823	0.717
8	Chem (IN30)	h	5.499	4.714	4.872	3.620	4.062	0.880	0.817	0.681	0.523	0.594
		l	3.497	3.325	3.288	2.850	2.139	0.505	0.480	0.475	0.419	0.345
		m	4.216	3.859	3.889	3.282	3.149	0.628	0.571	0.568	0.477	0.469
9	RPC (IN31)	h	5.050	5.073	5.063	5.218	6.351	0.792	0.801	0.689	0.817	0.894
		l	3.368	3.077	3.319	3.383	1.454	0.486	0.472	0.496	0.495	0.265
		m	4.601	3.961	4.041	3.887	3.273	0.711	0.586	0.591	0.586	0.505
10	NmMP (IN32)	h	4.427	3.628	5.063	6.304	3.337	0.744	0.566	0.793	0.776	0.553
		l	2.370	1.707	3.319	1.765	1.967	0.363	0.268	0.367	0.266	0.301
		m	2.984	2.585	3.537	2.897	2.705	0.471	0.396	0.546	0.412	0.432
11	BM&A (IN33)	h	5.067	4.12	6.171	5.659	3.716	0.834	0.845	0.855	0.917	0.938
		l	4.122	1.707	2.401	2.861	1.967	0.577	0.463	0.576	0.421	0.279
		m	4.665	3.62	4.528	4.178	3.313	0.715	0.640	0.710	0.638	0.647
12	MetPrd (IN34)	h	4.519	4.795	4.323	4.991	2.962	0.909	0.839	0.706	0.831	0.444
		l	3.376	3.717	3.528	3.641	0.498	0.451	0.559	0.509	0.738	0.199
		m	3.944	4.187	3.977	4.315	1.323	0.655	0.691	0.642	0.714	0.268
13	MotTr (IN36)	h	6.450	6.294	6.420	6.266	1.951	0.911	0.884	0.959	0.886	0.307
		l	3.255	3.411	3.941	3.871	0.395	0.471	0.492	0.574	0.542	0.225
		m	5.059	4.994	5.107	4.938	1.221	0.796	0.782	0.805	0.768	0.287
14	Tr. Eq. (IN37)	h	5.887	4.382	4.137	4.653	2.549	0.815	0.733	0.675	0.722	0.424
		l	3.333	2.654	2.970	2.936	0.515	0.509	0.396	0.477	0.439	0.200
		m	4.501	3.282	3.447	3.642	1.277	0.754	0.510	0.527	0.563	0.254
15	OMI (IN38)	h	6.347	6.334	5.965	8.400	3.941	0.893	0.714	0.818	0.831	0.818
		l	2.117	2.051	1.687	1.915	1.224	0.493	0.345	0.269	0.315	0.269
		m	4.237	4.079	3.623	4.527	2.616	0.751	0.572	0.535	0.595	0.490
16	EGS (IN41)	h	3.025	4.902	6.531	6.487	4.684	0.396	0.990	0.926	0.918	0.706
		l	1.023	2.051	1.031	2.348	0.916	0.190	0.339	0.204	0.358	0.214
		m	1.709	4.720	4.162	4.355	2.591	0.309	0.835	0.675	0.702	0.438

NVA and PK show higher dispersal in this decade in Food Products (IN21) both by CV and HH measures.

In Beverages (IN22), employment and NVA show greater relative dispersal.

Productive Capital shows maximum relative dispersal in case of Textiles (IN25), Wood (IN27) and Electricity, Gas and Steam (IN41) and Leather (IN29).

Units have maximum relative dispersal in Transport Equipment (IN37), Rubber, Petroleum and Coal (IN31), Basic Metals and Alloys (IN33)

NVA in Transport Equipment and Parts (IN37) show lesser dispersal than other variables.

In Metal Products (IN34), NVA showed the maximum relative dispersal.

In Textile Products (IN26) and Chemicals (IN30) the mean values of all variables are nearer the lowest values of the variables, implying relative dispersal is low in this industry. In Basic Metals and Alloys (IN33), Paper (IN28) and Electricity, Gas and Steam (IN41) opposite is the case.

Since Transport Industry show high Units dispersal but low NVA dispersal, it is obvious that setting up number of units is not bringing in either a highly productive work culture or any great profitability, due to lack of forward and backward linkages. Similarly, the quality of roads in smaller and rural areas must be leaving a lot to be desired.

Secondly, Textile Products (IN26) can be activated and region specific marketing and design centres can be established. Thirdly, Chemicals Industry (IN30), in this decade was a sunrise industry but in the Small States case, it is not dispersed, given the capital intensive nature of this industry and its need for forward linkages across space. But its potential can be seen in the fact that small states are agriculture intensive as also disease intensive. So fertilizer and medicines being prerequisites in smaller states, chemical industry will have a bigger role to perform than has been visualized and assigned so far.

1986 to 1995 (For Smaller States):

Table:5.4.4 Coefficient of Variation (C.V.) and Herfindahl Index (H.I.) of Industry Groups in Small states and UT of India during 1986-95:

Sl.No.	InN&Cd	Range	CV Results of Variables or Structural Ratios					HH results of Variables or Structural Ratios				
			Units	PK	Emp	NVA	K/L	Units	PK	Emp	K/L	NVA
1		h	2.023	3.607	2.864	3.180	1.470	0.324	0.618	0.451	0.231	0.623

	Food (IN21)	l	1.506	2.160	1.956	1.500	0.714	0.200	0.370	0.324	0.151	0.237
		m	1.703	2.747	2.253	2.515	1.101	0.268	0.491	0.371	0.189	0.431
2	Bev'g (IN22)	h	5.103	4.507	4.293	4.456	2.806	0.792	0.673	0.634	0.414	0.609
		l	1.936	1.693	2.040	2.113	1.056	0.304	0.310	0.391	0.265	0.343
		m	3.901	2.984	3.616	3.228	1.784	0.584	0.453	0.540	0.324	0.472
3	Textile (IN25)	h	5.076	7.730	4.091	5.669	7.291	0.656	0.915	0.575	0.869	0.738
		l	2.580	3.398	2.074	2.590	2.864	0.459	0.523	0.469	0.451	0.520
		m	2.902	5.068	2.943	4.335	4.548	0.514	0.673	0.539	0.635	0.632
4	TexPr (IN26)	h	6.538	6.821	6.707	6.901	3.038	0.927	0.980	0.958	0.462	0.995
		l	3.702	3.821	3.666	5.144	1.060	0.524	0.536	0.520	0.266	0.935
		m	4.801	5.113	4.861	6.501	2.009	0.689	0.733	0.699	0.378	0.963
5	Wood (IN27)	h	1.878	3.074	2.951	3.227	1.262	0.296	0.536	0.508	0.209	0.489
		l	1.222	2.306	2.015	1.429	0.690	0.198	0.425	0.322	0.148	0.228
		m	1.405	2.706	2.496	2.440	0.903	0.224	0.468	0.419	0.170	0.397
6	Paper (IN28)	h	3.877	4.283	3.778	4.436	2.128	0.618	0.709	0.290	0.345	0.823
		l	2.237	2.232	2.379	2.691	0.718	0.389	0.367	0.202	0.190	0.477
		m	2.898	3.044	2.731	3.469	1.385	0.506	0.546	0.464	0.234	0.642
7	29 Leath	h	5.201	7.586	6.883	7.453	7.989	0.688	0.900	0.829	0.943	0.886
		l	2.354	1.151	1.047	1.168	1.008	0.501	0.500	0.452	0.452	0.500
		m	3.392	3.526	2.080	4.937	3.792	0.590	0.614	0.544	0.631	0.706
8	30 Chem	h	3.993	5.059	4.125	4.602	2.902	0.666	0.911	0.683	0.425	0.788
		l	2.315	1.950	1.857	2.182	1.094	0.349	0.306	0.296	0.207	0.332
		m	3.385	3.642	3.291	3.012	1.782	0.545	0.623	0.537	0.290	0.466
9	31 Ru,PC	h	4.238	5.059	3.812	3.418	3.518	0.701	0.911	0.604	0.352	0.525
		l	2.566	2.353	2.523	1.017	0.798	0.494	0.442	0.452	0.191	0.427
		m	3.463	3.913	3.358	2.898	1.702	0.580	0.635	0.544	0.264	0.477
10	32 NmMP	h	3.673	3.258	3.843	3.584	3.584	0.702	0.535	0.709	0.613	0.534
		l	2.135	1.672	1.261	1.800	1.263	0.198	0.264	0.199	0.203	0.190
		m	2.666	2.387	2.760	2.247	2.389	0.463	0.396	0.484	0.389	0.359
11	33 BM&A	h	4.625	4.668	4.229	4.090	4.572	0.742	0.805	0.697	0.781	0.971
		l	3.022	1.453	2.258	1.623	1.430	0.454	0.240	0.344	0.273	0.273
		m	3.903	2.978	3.646	2.521	2.589	0.632	0.467	0.571	0.443	0.457
12	34 MetPr	h	3.743	4.488	3.990	4.346	2.562	0.720	0.774	0.642	0.900	0.822
		l	2.720	2.364	2.987	2.266	1.014	0.427	0.361	0.476	0.202	0.345
		m	3.272	3.681	3.499	3.640	1.609	0.546	0.642	0.578	0.340	0.630
13	36 MotTr	h	5.031	5.158	5.211	4.445	2.438	0.836	0.821	0.871	0.836	0.909
		l	2.943	2.767	3.777	3.090	1.333	0.467	0.590	0.615	0.249	0.646
		m	4.045	4.115	4.287	4.358	1.624	0.710	0.727	0.764	0.373	0.789
14	37 Tr.Eq.	h	5.297	4.594	4.416	4.445	3.693	0.871	0.914	0.983	0.878	0.720
		l	2.940	3.036	3.472	3.090	1.878	0.487	0.456	0.501	0.264	0.414
		m	3.994	3.598	3.912	3.854	2.256	0.662	0.623	0.677	0.428	0.557
15	38 OMI	h	3.025	3.101	1.986	2.360	2.800	0.974	0.856	0.986	0.823	0.685
		l	2.097	1.744	1.204	1.454	1.082	0.172	0.280	0.191	0.182	0.229
		m	2.365	2.383	1.669	1.861	1.594	0.471	0.591	0.453	0.362	0.384

16	EGS (IN41)	h	4.649	5.284	4.742	4.338	4.675	0.800	0.976	0.880	0.807	0.950
		l	1.889	1.994	1.189	1.485	1.114	0.203	0.087	0.239	0.235	0.243
		m	2.646	3.888	3.117	2.589	2.234	0.401	0.639	0.614	0.413	0.548

In this decade, Textile Products (IN26) dispersed well implying that smaller regions must have found a robust and vibrant market that enabled its spread. EGS did well in employment dispersal implying that urge for power reforms brought in greater local employment, though actual decentralization still has a long way to go. Machinery other than Transport (IN36) and Metal Products (IN34) also dispersed well in smaller regions in this decade. So these above stated industries are the gains of industrialization that have helped in bringing about regional spread, that is, whatever spread it could, to smaller, rural, hilly, coastal and island isolated and remote areas.

However the failures are many. The many labor intensive and capital intensive industries showed mean values both in CV and HH, nearer to lowest CV and HH values, implying that dispersal has a long winding goal to achieve.

Some Brief Inferences:

This section dealt with regional spread of industries in smaller regions that comprised of north-eastern hilly and inaccessible areas, coastal and islands, union territories, often with distinct administrative and population and distinct cultures that has tendency to resist homogeneity and integration with what it considers the mainstream socio-economic cultural life. While dispersal is noticed, it may often be with lesser magnitude of industries that establish themselves in these areas. So while with the limited opportunities, smaller regions can be said to have done well for themselves, a deeper and relative study of industries reveals that most HH and CV results, especially when mean values of CV and HH measures are found, it shows nearer in magnitude to the lowest values of those variables tabulated. This brought out the fact that dispersal is not so widespread and is relegated to few pockets.

Indeed there is vast scope for industries to make their presence felt in these areas and a large number of region specific measures and incentives along with market development measures can give a boost to industrialization in these areas.

In the next paragraph, we study regional spread of industries in larger regions and see how it differs from results of smaller regions.

1959-65 A Decadal analysis of Hhand CV measure of dispersal of industries of Large States:

Table: 5.4.5:Coefficient of Variation (C.V.) and Herfindahl Index (H.I.) of Industry Groups in Large states of India during 1959-65

Sl. No.	.N. Code	Range	CV Results of Variables or Structural Ratios					HH results of Variables or Structural Ratios				
			Units	PK	Emp	NVA	K/L	Units	PK	Emp	NVA	K/L
1	Food (IN21)	h	1.078	4.228	1.157	1.287	2.706	0.501	0.840	0.810	0.888	0.937
		l	0.913	1.053	1.043	0.856	0.525	0.336	0.719	0.266	0.816	0.369
		m	1.008	1.636	1.090	1.055	0.927	0.446	0.787	0.621	0.850	0.860
2	Bev' (IN22)	h	3.848	2.361	4.762	4.668	4.657	0.425	0.546	0.568	0.551	0.741
		l	1.914	1.472	2.702	1.488	1.014	0.126	0.119	0.212	0.174	0.256
		m	2.469	1.803	3.568	2.130	2.317	0.324	0.385	0.358	0.366	0.421
3	Textiles (IN25)	h	1.407	1.720	1.760	1.792	1.668	0.585	0.901	0.868	0.927	0.689
		l	1.182	1.457	1.469	*1.564*	0.420	0.545	0.554	0.573	0.667	0.500
		m	1.305	1.590	1.629	1.664	0.682	0.572	0.730	0.656	0.745	0.549
4	Tex'Prds (IN26)	h	1.546	1.736	1.745	4.313	0.735	0.215	0.451	0.242	0.511	0.547
		l	1.340	1.307	1.350	*1.314*	0.441	0.122	0.121	0.113	0.132	0.212
		m	1.456	1.498	1.578	2.038	0.646	0.174	0.326	0.314	0.345	0.326
5	Wood (IN27)	h	1.868	2.446	1.463	3.942	3.956	0.800	0.800	0.800	0.800	0.800
		l	1.014	1.625	*1.270*	2.007	0.555	0.500	0.533	0.507	0.607	0.500
		m	1.402	1.941	1.424	2.465	0.925	0.726	0.739	0.718	0.745	0.724
6	Paper (IN28)	h	1.632	1.419	1.463	4.630	1.781	0.324	0.352	0.321	0.362	0.187
		l	1.458	1.040	*1.270*	*1.430*	1.161	0.121	0.212	0.212	0.177	0.141
		m	1.509	1.217	1.364	1.509	1.288	0.321	0.289	0.259	0.231	0.164
7	Leath (IN29)	h	4.630	8.988	4.785	5.616	5.025	0.351	0.454	0.657	0.452	0.566
		l	3.155	4.061	4.081	2.486	1.578	0.121	0.231	0.241	0.126	0.211
		m	3.773	5.540	4.412	3.846	2.284	0.234	0.335	0.365	0.324	0.385
8	ChemPr (IN30)	h	2.836	4.919	4.120	4.249	4.348	0.365	0.422	0.421	0.425	0.458
		l	*2.031*	2.960	2.638	2.909	1.533	0.124	0.285	0.184	0.169	0.264
		m	2.232	3.916	3.405	3.686	2.693	0.354	0.352	0.324	0.328	0.368
9	Ru,Pe,C (IN31)	h	1.804	*1.811*	2.953	*4.076*	2.824	0.389	0.342	0.354	0.358	0.325
		l	1.285	1.467	1.425	2.148	1.195	0.211	0.16	0.124	0.158	0.124
		m	1.659	1.655	1.801	2.492	1.612	0.355	0.254	0.320	0.263	0.321
10	NmMP (IN32)	h	1.961	3.251	2.003	3.463	2.246	0.546	0.285	0.464	0.415	0.453
		l	1.822	1.251	*1.719*	1.788	*1.776*	0.101	0.121	0.201	0.131	0.212
		m	1.893	1.983	1.891	0.986	1.970	0.366	0.241	0.321	0.321	0.276
11	Bmet&A	h	2.058	3.113	2.424	2.766	*4.262*	0.324	0.521	0.357	0.358	0.498
		l	1.585	1.835	1.663	1.860	1.081	0.145	0.187	0.161	0.125	1.56

	(IN33)	m	1.781	2.278	1.970	2.329	2.043	0.301	0.356	0.295	0.320	0.288
12	MetPrd (IN34)	h	1.951	3.135	2.204	2.447	3.246	0.830	0.850	0.919	0.931	0.800
		l	1.680	2.337	2.008	2.002	0.502	0.755	0.500	0.800	0.800	0.570
		m	1.801	2.732	2.118	2.322	0.990	0.800	0.775	0.838	0.848	0.731
13	MotTr (IN36)	h	1.461	1.751	*1.605*	*3.937*	0.781	0.321	0.333	0.541	0.527	0.522
		l	1.352	1.272	1.382	1.614	0.539	0.198	0.181	0.101	0.129	0.169
		m	1.401	1.547	1.523	2.265	1.124	0.211	0.234	0.324	0.363	0.411
14	TrnEq&P (IN37)	h	1.818	2.217	1.874	3.527	4.547	0.800	0.850	0.919	0.932	0.850
		l	1.452	1.611	1.703	1.605	0.827	0.660	0.500	0.800	0.800	0.800
		m	1.625	1.923	1.791	2.091	1.457	0.706	0.676	0.701	0.787	0.602
15	OMI (IN38)	h	2.299	2.921	4.042	4.738	1.566	0.154	0.254	0.458	0.354	0.563
		l	1.608	1.963	1.895	2.269	0.705	0.111	0.124	0.211	0.211	0.211
		m	1.898	2.401	2.496	3.045	1.074	0.35	0.322	0.356	0.311	0.354
16	EGS (IN41)	h	1.341	1.991	1.720	2.760	*2.193*	0.321	0.366	0.354	0.421	0.271
		l	0.980	0.899	0.908	1.110	0.632	0.124	0.181	0.121	0.121	0.101
		m	1.176	1.475	1.331	1.656	1.260	0.289	0.259	0.268	0.295	0.23

In case of Wood (IN27), Metal Products (IN34) and Transport Equipment (IN37), high dispersal is noticed

Along with mean values being nearer to highest values of the variables. While productive capital was highly dispersed in case of Food Products as found by CV and HH, in other industries it was less so.

Food (IN21), Beverages (IN22), Chemicals (IN30), Non Metallic Mineral Product (IN32), Basic Metals And Alloys (IN33) showed dispersal Mean Values near to the lowest values. So this showed that all these industries showed more concentration than dispersal in most of the years of this decade.

CV and HH Results of Industry Groups in Large States and UTs during 1966-75:

Table: 5.4.6: Coefficient of Variation (C.V.) and Herfindahl Index (H.I.) of Industry Groups in Large states of India during 1966-75

Sl.No.	Inm & Co	Range	CV Results of Variables or Structural Ratios					HH results of Variables or Structural Ratios				
			Units	PK	Emp	NVA	K/L	Units	PK	Emp	NVA	K/L
1	Food (IN21)	h	1.092	1.324	1.880	1.100	0.591	0.114	0.152	0.246	0.133	0.084
		l	1.002	0.869	0.868	0.825	0.417	0.098	0.102	0.101	0.097	0.072

		m	1.060	1.091	1.132	1.023	0.519	0.107	0.125	0.134	0.117	0.078
2	Bev'es (IN22)	h	3.304	3.479	4.265	2.258	4.567	0.416	0.616	0.600	0.364	0.630
		l	1.944	1.449	2.621	1.805	0.700	0.250	0.164	0.399	0.212	0.090
		m	2.867	2.252	3.592	2.139	2.011	0.356	0.296	0.503	0.253	0.247
3	Textiles (IN25)	h	1.246	1.565	1.601	4.118	3.025	0.142	0.185	0.191	0.888	0.168
		l	1.114	1.308	1.375	1.570	0.365	0.131	0.154	0.161	0.191	0.510
		m	1.197	1.412	1.459	2.018	0.931	0.137	0.165	0.172	0.303	0.148
4	Tex.Prd (IN26)	h	1.776	2.415	2.006	4.102	3.626	0.208	0.319	0.244	0.775	0.623
		l	1.036	1.304	1.220	1.426	0.444	0.118	0.161	0.140	0.168	0.073
		m	1.457	1.745	1.712	2.299	1.103	0.166	0.210	0.201	0.339	0.170
5	Wood (IN27)	h	3.157	4.650	1.395	4.425	4.029	0.520	0.975	0.159	0.890	0.906
		l	0.867	1.264	0.888	1.110	0.606	0.101	0.144	0.103	0.127	0.088
		m	1.537	2.201	1.245	2.154	2.162	0.212	0.338	0.142	0.317	0.396
6	Paper (IN28)	h	1.583	4.111	2.602	3.610	3.893	0.197	0.940	0.395	0.739	0.801
		l	1.290	0.917	1.046	0.959	0.611	0.148	0.105	0.119	0.110	0.080
		m	1.362	1.584	1.505	1.596	1.803	0.159	0.251	0.199	0.230	0.309
7	Leather (IN29)	h	4.413	4.325	3.820	5.718	3.545	0.452	0.444	0.401	0.724	0.459
		l	1.880	2.228	2.295	2.988	0.371	0.209	0.255	0.287	0.376	0.113
		m	3.215	3.141	3.254	3.980	1.412	0.344	0.358	0.351	0.470	0.241
8	Chem (IN30)	h	2.091	5.116	3.147	3.226	5.694	0.231	0.408	0.408	0.399	0.493
		l	1.261	1.381	1.438	1.520	0.709	0.144	0.167	0.167	0.175	0.091
		m	1.682	2.579	2.351	2.245	2.299	0.188	0.342	0.275	0.262	0.313
9	R,P,C (IN31)	h	3.655	1.811	1.667	2.246	1.412	0.756	0.213	0.189	0.324	0.160
		l	1.136	1.265	0.991	1.748	0.574	0.130	0.147	0.116	0.204	0.078
		m	1.847	1.618	1.448	1.971	0.894	0.261	0.194	0.167	0.248	0.112
10	NmMP (IN32)	h	2.022	4.031	3.720	2.214	3.503	0.117	0.803	0.694	0.330	0.623
		l	1.041	1.032	1.007	1.080	0.658	0.100	0.089	0.092	0.092	0.091
		m	1.511	1.596	1.609	1.568	1.460	0.107	0.209	0.183	0.132	0.219
11	BM&A (IN33)	h	1.436	1.694	1.511	2.748	1.103	0.167	0.211	0.177	0.477	0.129
		l	0.902	1.141	1.183	1.315	0.745	0.104	0.131	0.136	0.155	0.091
		m	1.185	1.490	1.385	1.667	0.955	0.136	0.180	0.162	0.220	0.111
12	MetPrd (IN34)	h	1.729	2.128	1.922	2.505	2.457	0.206	0.297	0.246	0.354	0.376
		l	0.992	1.466	1.325	1.876	0.336	0.113	0.178	0.156	0.254	0.065
		m	1.512	1.907	1.753	2.121	0.931	0.180	0.248	0.218	0.289	0.130
13	Mot Tr (IN36)	h	1.245	1.192	2.040	1.554	0.989	0.144	0.136	0.279	0.188	0.113
		l	1.017	1.008	1.096	1.196	0.498	0.116	0.115	0.125	0.138	0.074
		m	1.197	1.115	1.322	1.417	0.639	0.137	0.127	0.158	0.168	0.084
14	TrnEq (IN37)	h	1.620	1.647	2.896	1.675	4.088	0.189	0.203	0.449	0.193	0.823
		l	1.035	1.452	1.393	1.151	0.681	0.118	0.176	0.163	0.131	0.092
		m	1.283	1.562	1.750	1.394	1.396	0.147	0.186	0.221	0.160	0.218
15	OMI (IN38)	h	2.179	2.186	2.040	4.556	1.845	0.264	0.588	0.264	0.939	0.162
		l	1.665	1.008	1.096	1.605	0.464	0.148	0.187	0.158	0.192	0.074
		m	1.860	1.192	1.927	2.927	1.088	0.218	0.305	0.228	0.447	0.133
16	EGS	h	1.405	1.813	1.841	3.995	4.140	0.160	0.104	0.108	0.891	0.640
		l	1.108	1.048	1.051	1.019	0.515	0.126	0.087	0.087	0.109	0.076

	(IN41)	m	1.278	1.284	1.687	1.563	1.677	0.145	0.096	0.101	0.233	0.290

While Textiles, Leather, Textile Products showed high dispersal with mean values being nearer to the highest values recorded both in CV and HH, Metal Products (IN34) also showed dispersal on the higher side with mean values being nearer to the highest values.

Beverages (IN22), Leather (IN29), show higher dispersal both in terms of higher values and in terms of mean values being nearer to higher values.

But in OMI, EGS, Chemicals, Rubber, Petroleum Coal, Non metallic Mineral products showed mean values being near to lowest values. Thus relatively, capital intensive industries did not disperse well in the recession hit 1966-75 period. Thus recession did dampen the prospects of regional dispersal of Indian industries.

1976-85 (Large States- results for all variables)

Table: 5.4.7:

Coefficient of Variation (C.V.) and Herfindahl Index (H.I.) of Industry Groups in Large states of India during 1976-85

Sl.No.	I.Na&.C	Range	CV Results of Variables or Structural Ratios					HH results of Variables or Structural Ratios				
			Units	PK	Emp	NVA	K/L	Units	PK	Emp	NVA	K/L
1	Food (IN21)	h	1.900	3.886	1.078	1.296	0.782	0.109	0.115	0.107	0.115	0.093
		l	0.966	1.011	0.863	0.916	0.358	0.091	0.094	0.096	0.097	0.063
		m	1.374	1.038	1.003	1.067	0.508	0.098	0.108	0.101	0.103	0.074
2	Bev'ge (IN22)	h	2.358	1.404	2.635	1.988	1.226	0.365	0.168	0.423	0.258	0.142
		l	2.075	1.023	2.167	1.272	0.526	0.185	0.108	0.319	0.144	0.077
		m	2.114	1.160	2.413	1.447	0.697	0.307	0.133	0.376	0.175	0.089
3	Textile (In25)	h	2.957	4.806	5.606	4.824	2.784	0.224	0.513	0.409	0.405	0.950
		l	2.215	2.173	4.081	3.882	1.025	0.183	0.230	0.323	0.337	0.148
		m	2.527	3.260	4.691	4.619	1.642	0.198	0.325	0.359	0.375	0.295
4	TexPrd (IN26)	h	1.669	1.406	1.560	1.701	0.837	0.207	0.168	0.194	0.219	0.099
		l	1.230	1.118	1.205	1.160	0.601	0.143	0.127	0.136	0.132	0.080
		m	1.377	1.239	1.302	1.373	0.685	0.166	0.144	0.152	0.165	0.087
5	Wood (In27)	h	1.094	1.087	1.826	1.457	0.759	0.101	0.124	0.243	0.176	0.091
		l	0.866	0.918	1.010	1.006	0.305	0.091	0.106	0.108	0.115	0.065
		m	1.046	1.009	1.128	1.135	0.424	0.096	0.113	0.125	0.134	0.071
6	Paper (IN28)	h	1.219	2.377	1.238	1.363	3.326	0.141	0.115	0.108	0.162	0.671
		l	1.083	1.721	1.025	0.945	0.509	0.124	0.094	0.102	0.109	0.073
		m	1.130	1.293	1.041	1.126	1.025	0.130	0.103	0.106	0.130	0.155
7	Leath (IN29)	h	2.346	2.377	2.185	2.396	2.248	0.306	0.275	0.275	0.302	0.266
		l	1.892	1.721	1.895	1.889	0.701	0.215	0.233	0.233	0.232	0.097
		m	2.127	1.987	2.019	2.141	1.189	0.271	0.250	0.251	0.268	0.142
8	Chem (IN30)	h	1.380	1.682	1.542	2.095	1.311	0.923	0.968	0.930	0.931	0.927
		l	1.033	1.015	1.034	1.311	0.453	0.119	0.116	0.118	0.158	0.070
		m	1.110	1.325	1.219	1.632	0.841	0.214	0.235	0.228	0.293	0.190
9	Ru,eC (31)	h	1.277	2.105	1.860	3.739	1.573	0.902	0.921	0.928	0.952	0.742
		l	1.001	0.930	0.973	1.121	0.604	0.114	0.107	0.111	0.127	0.079
		m	1.116	1.269	1.248	1.973	0.847	0.217	0.261	0.235	0.326	0.184
10	NmMP (IN32)	h	1.093	1.877	1.098	1.501	2.130	0.999	0.643	0.795	0.743	0.310
		l	0.844	0.753	0.691	0.734	0.941	0.098	0.084	0.085	0.085	0.108
		m	0.936	1.594	1.305	1.089	1.171	0.206	0.155	0.167	0.173	0.248
11	BM&A (IN33)	h	1.246	1.801	1.163	1.381	0.976	0.807	0.980	0.912	0.915	0.802
		l	0.806	1.466	0.999	1.018	0.713	0.090	0.178	0.114	0.116	0.087
		m	1.053	1.590	1.057	1.195	0.832	0.175	0.283	0.209	0.227	0.176
12	MetPrd (IN34)	h	1.094	1.616	1.356	1.894	1.217	0.411	0.458	0.436	0.480	0.362
		l	0.986	1.197	0.838	1.722	0.219	0.106	0.138	0.098	0.223	0.062
		m	1.028	1.423	1.258	1.777	0.487	0.198	0.258	0.230	0.318	0.152
13		h	1.150	1.106	1.207	1.299	1.849	0.404	0.448	0.405	0.448	0.467

	Mot Tr (IN36)	l	1.036	0.095	0.963	0.273	0.290	0.118	0.108	0.110	0.101	0.063
		m	1.083	0.980	1.042	1.123	0.535	0.212	0.205	0.207	0.221	0.131
14	TrnEq (IN37)	h	1.291	1.742	1.398	1.638	1.589	0.490	0.422	0.428	0.414	0.458
		l	1.115	1.214	1.085	1.314	0.951	0.127	0.139	0.124	0.153	0.109
		m	1.175	1.517	1.247	1.454	1.345	0.229	0.270	0.230	0.258	0.245
15	OMI (IN38)	h	1.915	1.880	1.356	2.561	1.786	0.915	0.436	0.427	0.444	0.329
		l	1.351	1.039	1.175	1.356	0.603	0.157	0.119	0.134	0.158	0.081
		m	1.606	1.308	1.279	1.745	0.912	0.277	0.240	0.234	0.313	0.183
16	EGS (IN41)	h	1.386	2.102	2.547	4.039	3.217	0.571	0.540	0.852	0.772	0.438
		l	0.803	1.327	1.098	1.484	0.669	0.108	0.110	0.108	0.133	0.095
		m	1.113	1.714	1.694	1.943	1.602	0.231	0.251	0.243	0.332	0.269

Note: h- highest; l-lowest; m-mean value

In this decade when recession is said to have lost its sting and recovery is supposed to have begun, Capital intensive industries did well to revive dispersality.

But the hold of recession, or the lagging effect of infrastructure, especially, transport Industry, could be easily identified as the type of industries that needed to be boosted up for a more pace of industrialization.

But while Textiles showed high dispersal, the lack of dispersal in textile products (IN26) showed lacunae in Indian Planning as far as meticulous input-output planning exercises needed to be undertaken.

1986-1995 (Large States-CV and HH results for all variables)

Table: 5.4.8:

Coefficient of Variation (C.V.) and Herfindahl Index (H.I.) of Industry Groups in Large States of India during 1986-95

Sl.No.	Inm & Cd	Range	CV Results of Variables or Structural Ratios					HH results of Variables or Structural Ratios				
			Units	PK	Emp	NVA	K/L	Units	PK	Emp	NVA	K/L
1	21 Food	h	1.129	1.796	1.078	2.725	0.944	0.129	0.237	0.102	0.117	0.108
		l	1.006	1.013	1.008	0.758	0.354	0.109	0.096	0.096	0.091	0.066
		m	1.052	1.134	1.045	1.120	0.524	0.119	0.118	0.099	0.105	0.076
2	22 Bev'	h	2.854	2.497	2.611	1.487	1.376	0.522	0.142	0.436	0.157	0.164
		l	1.052	1.033	1.019	1.068	0.599	0.290	0.107	0.355	0.130	0.080
		m	2.894	1.333	2.524	1.296	0.636	0.446	0.118	0.387	0.139	0.095

3	25	h	1.936	2.424	2.438	2.625	1.683	0.249	0.319	0.368	0.383	0.261
	Textiles	l	1.487	1.636	2.169	1.990	1.030	0.169	0.194	0.320	0.247	0.121
		m	1.670	2.047	2.300	2.398	1.289	0.196	0.262	0.337	0.347	0.162
4	26	h	1.705	1.380	1.923	1.765	0.872	0.220	0.164	0.227	0.231	0.112
	TexPrds	l	1.385	1.251	1.281	1.369	0.563	0.166	0.137	0.142	0.161	0.076
		m	1.511	1.314	1.542	1.512	0.736	0.184	0.154	0.179	0.184	0.090
5	27	h	1.088	1.206	1.923	1.701	0.976	0.107	0.200	0.119	0.219	0.112
	Wood	l	0.877	0.963	1.290	0.993	0.347	0.097	0.110	0.101	0.107	0.066
		m	1.027	1.175	1.305	1.254	0.636	0.102	0.137	0.108	0.149	0.083
6	28	h	1.150	2.666	1.680	1.274	1.625	0.132	0.452	0.108	0.149	0.205
	Paper	l	1.083	0.786	0.815	0.899	0.978	0.123	0.092	0.096	0.101	0.071
		m	1.123	1.131	1.341	1.036	1.173	0.129	0.146	0.100	0.119	0.109
7	29	h	3.686	2.506	2.564	2.738	1.448	0.683	0.338	0.367	0.409	0.141
	Leath	l	2.395	1.960	2.083	1.948	0.486	0.329	0.244	0.267	0.235	0.082
		m	2.706	2.200	2.340	2.218	0.976	0.404	0.289	0.317	0.292	0.119
8	30	h	1.174	1.703	1.280	1.863	0.743	0.135	0.219	0.149	0.251	0.089
	Chem	l	1.042	1.237	1.151	1.232	0.444	0.119	0.144	0.132	0.143	0.074
		m	1.102	1.449	1.216	1.637	0.611	0.126	0.176	0.141	0.209	0.080
9	31	h	1.093	1.163	1.503	1.496	1.595	0.121	0.134	0.113	0.183	0.189
	Ru,Pe,C	l	0.934	0.772	0.823	1.048	0.910	0.103	0.099	0.093	0.120	0.073
		m	1.006	1.025	1.134	1.295	1.175	0.112	0.115	0.100	0.153	0.100
10	32	h	1.811	1.071	1.166	1.072	1.084	0.097	0.122	0.084	0.101	0.124
	NmMP	l	0.815	0.955	0.668	0.869	0.659	0.093	0.105	0.082	0.087	0.083
		m	1.182	1.016	1.028	1.026	0.811	0.095	0.113	0.083	0.096	0.096
11	33	h	1.766	1.509	1.099	1.416	1.022	0.097	0.185	0.117	0.170	0.117
	BM&A	l	0.756	0.982	0.993	1.149	0.591	0.093	0.112	0.102	0.132	0.078
		m	1.079	1.284	1.021	1.254	0.776	0.092	0.152	0.111	0.146	0.093
12	34	h	1.800	1.792	1.148	1.883	0.894	0.114	0.237	0.125	0.255	0.094
	MetPrd	l	1.001	1.150	0.905	1.226	0.340	0.103	0.132	0.105	0.142	0.064
		m	1.127	1.381	1.063	1.518	0.496	0.109	0.167	0.122	0.189	0.074
13	36	h	1.100	1.245	1.093	1.372	1.143	0.126	0.145	0.125	0.163	0.094
	MotTr	l	1.005	0.968	0.946	1.051	0.293	0.115	0.112	0.105	0.120	0.064
		m	1.039	1.064	1.030	1.184	0.639	0.119	0.121	0.111	0.137	0.070
14	37	h	1.171	1.547	1.119	1.795	1.021	0.133	0.183	0.129	0.223	0.117
	TrEq	l	1.094	1.278	0.983	1.117	0.632	0.125	0.147	0.113	0.127	0.082
		m	1.136	1.371	1.042	1.428	0.749	0.129	0.159	0.119	0.168	0.094
15	38	h	1.530	1.418	1.241	1.545	0.504	0.184	0.167	0.139	0.220	0.126
	OMI	l	1.094	1.050	1.001	1.230	0.500	0.144	0.110	0.119	0.131	0.073
		m	1.426	1.394	1.153	1.183	1.098	0.160	0.141	0.129	0.171	0.083
16	41	h	2.921	1.989	2.631	2.562	2.255	0.468	0.243	0.430	0.336	0.266
	EGS	l	0.995	1.043	1.021	1.260	1.020	0.119	0.133	0.118	0.145	0.114
		m	1.363	1.416	1.135	1.690	1.163	0.177	0.177	0.152	0.205	0.150

NVA shows less dispersal in Beverages (IN22) than Units or PK showing scope and need for policy and implementation improvement. Leather (IN29) showed maximum dispersal while Other Manufacturing Industries (IN38) showed mean values nearer the highest values though lowest values were above 1 in case of CV.

Non-Metallic Mineral Products (IN32) also shows mean values of CV and HH near to the lowest values.

In Metal Products (IN34), employment dispersal in HH show mean value near to the highest, whereas in other measures of variables, mean values are near to the lowest values. So there has been much entrepreneurial initiative in creating employment in this decade, despite the industry getting concentrated or showing low dispersal in PK, NVA and Units. This being an intermediate industry, the sooner the planners realize this trend and work for housing, education and institutional reforms along with working out of forward linkages and reducing transport costs by establishing industries that uses products of Metal Products as inputs, the sooner will be the multiplier effects get manifested with Metal Products as the leading sector.

Analysis of Dispersal Measures through HH and CV Analysis of all the States and Union Territories taken together for a 40year time period:

Table: 5.4.9:

Regional Dispersal of HH and CV, 40 year HH and CV for all 5 variable and structural ratios for 2-digit Industries for 1956-95.

	Range	IN	HHunit	HHPK	HHemp	HHnva	HH K/L	CVunit	CVPk	CVemp	CVnva	CV K/L
	h	21	0.127	0.874	0.242	0.125	0.682	1.796	6.747	2.972	2.147	5.725
	l		0.089	0.093	0.093	0.087	0.047	0.336	0.242	0.419	0.221	0.204
	m		0.108	0.356	0.112	0.106	0.128	1.463	1.835	1.593	1.538	1.423
	h	22	0.517	0.616	0.614	0.595	0.924	5.324	5.935	8.124	7.963	3.802
	l		0.120	0.100	0.113	0.116	0.063	2.466	1.495	3.189	1.699	0.804
	m		0.318	0.177	0.414	0.193	0.211	3.923	2.437	4.684	2.714	1.997
	h	25	0.517	0.365	0.205	0.885	2.720	2.313	3.629	2.775	6.407	1.889
	l		0.147	0.111	0.115	0.108	0.067	1.579	1.624	1.547	1.571	0.583
	m		0.183	0.185	0.148	0.221	0.725	1.889	2.394	2.087	2.377	1.116
	h	26	0.157	0.319	0.240	0.347	0.423	2.946	4.120	3.302	4.085	3.185
	l		0.116	0.115	0.116	0.118	0.067	1.732	1.713	1.699	1.799	0.775
	m		0.154	0.157	0.162	0.102	0.258	2.242	2.282	2.265	2.827	1.244
	h	27	0.508	0.972	0.176	0.889	0.786	4.998	7.376	2.630	7.030	4.046
	l		0.086	0.101	0.087	0.092	0.048	1.264	1.381	1.278	1.351	0.490
	m		0.135	0.191	0.123	0.216	0.147	1.848	2.417	1.954	3.101	1.499
	h	28	0.193	0.938	0.381	0.737	0.794	0.737	6.798	4.225	5.805	6.487
	l		0.099	0.077	0.079	0.089	0.054	0.089	1.141	1.168	1.316	0.669

	m		0.135	0.143	0.129	0.152	0.185	0.152	1.908	1.809	2.021	1.987
	h	29	0.677	0.892	0.576	0.724	0.966	7.898	15.332	8.162	9.754	8.572
	l		0.206	0.199	0.211	0.219	0.083	2.953	2.770	2.942	3.018	0.691
	m		0.354	0.359	0.340	0.360	0.237	4.881	5.340	4.996	3.193	2.452
	h	30	0.367	0.915	0.495	0.516	0.909	4.838	8.325	7.028	6.987	9.161
	l		0.102	0.111	0.103	0.057	0.052	1.509	1.653	1.528	1.851	0.581
	m		0.167	0.288	0.232	0.266	0.195	2.696	3.781	3.316	3.638	2.607
	h	31	0.752	0.230	0.388	0.829	0.183	5.871	3.032	4.823	6.654	2.758
	l		0.088	0.090	0.080	0.115	0.060	1.309	1.352	1.183	1.665	0.850
	m		0.162	0.162	0.144	0.238	0.108	2.202	2.299	2.144	2.963	1.542
	h	32	0.120	0.801	0.692	0.314	0.616	1.761	6.641	6.129	3.419	5.742
	l		0.082	0.075	0.107	0.084	0.067	1.211	1.124	1.092	1.171	0.267
	m		0.100	0.131	0.113	0.111	0.133	1.456	1.721	1.482	1.553	1.659
	h	33	0.217	0.408	0.277	0.476	0.408	3.259	5.099	3.965	4.561	6.989
	l		0.077	0.109	0.095	0.114	0.109	1.145	1.593	1.405	1.374	0.765
	m		0.125	0.206	0.154	0.197	0.206	1.840	2.701	2.205	2.623	2.059
	h	34	0.207	0.440	0.253	0.345	0.291	3.096	6.603	3.376	4.088	4.850
	l		0.087	0.124	0.090	0.136	0.049	1.299	1.753	1.329	1.899	0.398
	m		0.137	0.235	0.174	0.241	0.130	1.988	2.907	2.399	3.020	1.119
	h	36	0.156	0.207	0.273	0.767	0.794	2.310	2.899	3.359	6.486	4.160
	l		0.095	0.105	0.092	0.097	0.051	1.407	1.406	1.404	1.442	0.491
	m		0.123	0.130	0.134	0.188	0.137	1.814	1.904	1.942	2.423	1.186
	h	37	0.193	0.275	0.445	0.551	0.789	2.809	1.790	4.634	5.762	7.081
	l		0.100	0.130	0.100	0.124	0.066	1.488	3.632	1.470	1.808	0.870
	m		0.130	0.182	0.166	0.187	0.170	1.929	2.508	2.347	5.085	1.857
	h	38	0.233	0.583	0.597	0.937	1.054	3.519	5.404	6.523	7.662	2.427
	l		0.108	0.096	0.097	0.116	0.054	1.528	1.560	1.289	1.634	0.711
	m		0.173	0.210	0.185	0.296	0.139	2.487	2.817	2.599	3.488	1.405
	h	41	0.145	0.377	0.377	0.891	0.927	2.288	3.392	4.735	6.613	9.390
	l		0.072	0.056	0.056	0.102	0.076	1.031	0.844	1.209	1.594	0.363
	m		0.107	0.116	0.116	0.173	0.417	1.554	1.623	2.143	2.691	3.688

In Food Products (IN21), only productive capital (PK) shows high dispersal in both CV and HH but not so of other variables. This shows that though sufficient capital was injected into this sector, it did not result in the requisite levels of development and dispersal, presumably due to high elite consumption of entrepreneurs and rentier class of this industry, demonstration effect of luxury consumption of all sections of population together eating away the productive potential of capital. The backwardness of agriculture sector and increasing base level of population and its growth and high base level of L/O and Gini Ratio of poverty are also other factors to explain the relatively low dispersal of Food industry in other 4 variables.

In Beverages (IN22), mean value of HH measure of employment is nearer to the highest value but all the other variables' mean values are nearer to the lowest HH and CV values of the variables. So while there has been employment dispersal in Beverages Industry (IN22), it might result in underemployment and unemployment that seems to be high due to decentralized dispersal.

The industries for which mean values of HH and CV recorded figures nearer to the lowest HH and CV values are Electricity, Gas and Steam (41), Basic Metals and Alloys (IN33), Non-Metallic Mineral Products (IN32) and Machinery other than Transport (IN36), Wood (IN27), Paper (IN28). So over the long term, in these industries, mean values being nearer to the lower values indicated that all those industries are relatively less dispersed due to high capital intensity in those investment goods and Intermediates category.

In Textiles (IN25), mean CV figures are nearer to the highest values of each variable while the mean HH figures are nearer to the lowest figures recorded that indicated it is less dispersed than others, because HH is superior to CV in respect of measuring regional dispersal.

In Paper (IN28) and in Non-Metallic Mineral Products, Units and also Employment show less dispersal than other three variables.

The highest dispersed industries have been Other Manufacturing Industries (IN38).

HH and CV Results of Industry Groups of All States and Union Territories of India during 1959-65:

Table: 5.4.10:

Coefficient of Variation (C.V.) and Herfindahl Index (H.I.) of Industry Groups in All states and UTs of India during 1959-65

Range	IN & Code	CV Results of Variables or Structural Ratios					HH results of Variables or Structural Ratios				
		Units	PK	Emp	NVA	K/L	Units	PK	Emp	NVA	K/L
h	21	1.823	6.747	1.947	2.147	5.725	0.121	0.874	0.130	0.143	0.682
l	Food	1.579	1.774	1.774	1.511	1.199	0.106	0.119	0.119	0.102	0.076
m		1.715	2.685	1.846	1.785	3.058	0.11	0.223	0.123	0.119	0.176
h	22	6.564	4.028	8.124	7.963	7.944	0.450	0.167	0.614	0.595	0.796
l	Bev’rag	3.270	2.511	4.610	2.625	1.729	0.229	0.259	0.376	0.174	0.132
m		4.212	3.076	6.087	3.633	3.952	0.289	0.201	0.491	0.249	0.335
h	25	1.199	2.748	2.775	2.889	1.250	0.154	0.193	0.205	0.199	1.052
l	Textiles	1.171	2.330	2.499	2.489	0.675	0.124	0.162	0.163	0.172	0.896
m		1.186	2.578	2.608	2.656	0.926	0.145	0.179	0.182	0.186	0.979
h	26	2.637	2.894	2.935	7.080	1.237	0.174	0.196	0.194	0.847	0.108
l	Tex.Prd	2.270	2.193	2.290	2.234	0.880	0.151	0.146	0.152	0.149	0.098
m		2.464	2.510	2.630	3.338	1.062	0.163	0.177	0.176	0.279	0.094
h	27	2.991	3.548	2.630	6.200	2.423	0.204	0.257	0.176	0.625	0.160
l	Wood	1.658	2.668	1.947	2.987	1.064	0.112	0.178	0.144	0.190	0.078
m		2.258	3.122	2.320	3.922	1.385	0.152	0.218	0.154	0.312	0.105
h	28	2.608	2.369	2.290	2.760	6.490	0.179	0.159	0.153	0.189	0.767
l	Paper	2.351	1.670	2.081	1.820	1.210	0.153	0.113	0.134	0.122	0.095
m		2.420	1.992	2.176	2.395	2.426	0.165	0.133	0.146	0.163	0.206
h	29	7.898	15.330	8.160	9.580	8.570	0.548	0.892	0.576	0.552	0.544
l	Leather	5.380	6.930	6.960	4.240	1.010	0.353	0.427	0.423	0.356	0.253
m		6.432	9.450	7.530	6.560	3.890	0.423	0.554	0.468	0.442	0.350
h	30	4.838	8.177	7.028	6.987	6.884	0.310	0.682	0.495	0.516	0.519
l	Chem	3.372	4.897	4.355	4.819	2.720	0.220	0.325	0.283	0.318	0.187
m		3.652	6.799	5.633	6.092	4.533	0.237	0.514	0.389	0.434	0.316
h	31	2.955	3.032	4.823	6.654	2.758	0.202	0.208	0.388	0.663	0.183
l	R-P-C	2.098	2.460	2.359	3.520	1.218	0.139	0.164	0.156	0.249	0.098
m		2.718	2.738	2.961	4.068	1.767	0.181	0.183	0.207	0.319	0.124
h	32	1.632	2.121	1.687	2.450	1.940	0.113	0.141	0.115	0.117	0.130
l	NmMP	1.400	1.124	1.232	1.367	1.300	0.101	0.091	0.094	0.100	0.096
m		1.505	1.670	1.504	1.670	1.580	0.107	0.116	0.107	0.117	0.111
h	33	3.259	5.099	3.965	4.524	6.989	0.217	0.408	0.278	0.346	0.836
l	BM&A	2.592	2.994	2.769	3.096	1.786	0.175	0.218	0.189	0.220	0.137
m		2.862	3.821	3.250	3.824	3.356	0.195	0.301	0.231	0.291	0.298
h	34	3.100	6.600	3.625	3.900	4.850	0.207	0.840	0.253	0.308	0.482

l	MetPrd	2.618	3.795	3.191	3.200	0.856	0.180	0.294	0.236	0.245	0.084
m		2.793	4.400	3.376	3.522	1.153	0.191	0.390	0.246	0.264	0.145
h	36	2.310	2.899	2.632	6.486	4.160	0.155	0.206	0.182	0.766	0.794
l	MotTr	2.157	2.124	2.264	2.669	0.879	0.141	0.144	0.520	0.186	0.080
m		2.221	2.566	2.497	3.737	2.252	0.149	0.178	0.171	0.334	0.236
h	37	2.800	3.630	3.095	5.762	7.080	0.193	0.276	0.218	0.551	0.847
l	Tr. Eq.	2.263	2.633	2.763	2.633	1.12	0.151	0.182	0.194	0.179	0.068
m		2.521	3.151	2.940	3.428	2.315	0.169	0.224	0.204	0.262	0.208
h	38	3.519	4.666	6.523	7.662	2.427	0.233	0.368	0.597	0.788	0.158
l	OMI	2.513	3.504	3.017	3.011	1.083	0.164	0.244	0.202	0.253	0.099
m		2.963	3.906	3.940	4.821	1.628	0.197	0.278	0.291	0.339	0.123
h	41	2.288	3.396	2.934	4.533	3.742	0.167	0.228	0.197	0.352	0.250
l	EGS	1.673	1.534	1.549	1.894	1.078	0.115	0.111	0.111	0.128	0.094
m		2.004	2.518	2.339	2.790	2.109	0.139	0.174	0.151	0.195	0.150

Note: h- highest value, l-lowest value, m -mean value.

The highest dispersed industries the period of 1959-65 were Beverages (IN22), Leather (IN29), Chemicals (IN30) and Basic Metals and Alloys (IN33).

In Metal Products (IN34), Transport Equipment (IN37) mean values are much nearer to the lowest values of the decade for each of the variables. NVA dispersal in Metal Products is more concentrated than dispersed.

Table: 5.4.11: CV and HH results for All Industries of all States and UT for the period 1966-75

Sl. No	Ind.Gr. Code	Range	CV Results of Variables or Structural Ratios					HH results of Variables or Structural Ratios				
			Units	PK	Emp	NVA	K/L	Units	PK	Emp	NVA	K/L
1	21	h	1.5310	1.5880	1.5190	1.5230	1.5500	0.1160	0.1490	0.2450	0.1230	0.4040
	Food	l	1.3160	1.3200	1.3810	1.3520	0.5700	0.0900	0.0980	0.0980	0.0940	0.0500
		m	1.340	1.580	1.675	1.440	1.145	0.104	0.123	0.132	0.114	0.116

2	22	h	5.636	5.935	7.275	4.707	3.501	0.410	0.616	0.592	0.414	0.630
	Bev	l	2.99	2.318	3.981	3.307	1.040	0.245	0.158	0.392	0.216	0.072
		m	4.250	3.337	5.259	3.565	1.793	0.316	0.263	0.440	0.224	0.211
3	25	h	2.038	2.3	2.62	5.406	0.966	0.138	0.159	0.199	0.785	0.633
	Textile	l	1.578	1.933	2.163	2.038	0.587	0.114	0.148	0.153	0.165	0.206
		m	1.19	2.01	2.28	3.049	0.766	0.131	0.153	0.166	0.287	0.216
4	26	h	2.946	4.11	3.3	6.149	6.185	0.205	0.319	0.239	0.617	0.623
	Tex.Prd	l	1.731	2.117	2.013	2.581	0.775	0.116	0.146	0.137	0.163	0.067
		m	2.42	2.89	2.833	3.665	1.833	0.163	0.206	0.197	0.184	0.165
5	27	h	4.998	2.376	2.32	7.03	7.645	0.508	0.572	0.154	0.689	0.786
	Wood	l	1.35	2.628	1.361	1.737	1.116	0.092	0.137	0.092	0.121	0.079
		m	3.43	2.405	1.954	3.319	3.23	0.202	0.326	0.132	0.307	0.368
6	28	h	2.43	6.808	4.225	5.804	6.41	0.193	0.938	0.381	0.737	0.795
	Paper	l	2.11	1.47	1.64	1.523	1.02	0.138	0.099	0.111	0.103	0.0643
		m	2.146	2.607	2.42	2.545	2.954	0.149	0.247	0.1901	0.221	0.2997
7	29	h	7.528	7.378	7.526	9.754	6.047	0.452	0.444	0.402	0.725	0.966
	Leather	l	3.028	3.802	3.914	5.098	1.096	0.209	0.255	0.264	0.376	0.113
		m	5.485	5.358	5.55	6.789	2.556	0.394	0.358	0.352	0.47	0.355
8	30	h	3.428	4.225	5.134	5.281	5.161	0.205	0.915	0.404	0.399	0.316
	Chem	l	2.008	2.224	2.179	2.244	1.086	0.137	0.145	0.151	0.157	0.079
		m	2.705	2.603	3.837	3.659	3.694	0.179	0.339	0.271	0.256	0.305
9	31	h	5.871	3.005	2.73	3.61	2.284	0.752	0.211	0.183	0.319	0.152
	R-P-C	l	1.793	1.947	1.647	2.85	1.058	0.124	0.138	0.112	0.197	0.087
		m	2.986	2.697	2.363	3.199	1.593	0.254	0.191	0.162	0.242	0.119
10	32	h	1.69	6.64	6.13	3.42	5.74	0.113	0.801	0.6923	0.314	0.616
	NmMP	l	1.38	1.28	1.17	1.17	0.266	0.097	0.088	0.089	0.089	0.086
		m	1.48	2.29	2.01	1.665	2.1502	0.1029	0.206	0.179	0.128	0.215
11	33	h	2.337	2.883	2.518	4.561	1.851	0.1609	0.2107	0.1756	0.211	0.903
	BM&A	l	1.49	1.835	1.876	2.1	1.266	0.101	0.1278	0.131	0.145	0.089
		m	1.945	2.5	2.296	2.739	1.562	0.132	0.179	0.16	0.216	0.217

12	34	h	2.69	3.459	3.119	4.08	3.97	0.187	0.289	0.236	0.345	0.991
	MetPrd	l	1.515	2.15	1.96	2.79	0.554	0.102	0.161	0.1418	0.232	0.05
		m	2.326	3.055	2.785	3.384	1.482	0.163	0.24	0.208	0.278	0.253
13	36	h	1.962	1.990	3.359	2.521	1.619	0.132	0.134	0.273	0.184	0.872
	MotTr	l	1.637	1.598	1.731	1.876	0.776	0.111	0.108	0.118	0.128	0.064
		m	1.885	1.849	2.158	2.322	1.000	0.127	0.124	0.153	0.164	0.192
14	37	h	2.417	2.67	4.633	2.717	6.381	0.667	0.201	0.445	0.19	0.451
	Tr.Eq.	l	1.624	2.29	2.25	1.918	1.01	0.109	0.168	0.161	0.13	0.081
		m	1.92	2.53	2.8	2.268	2.32	0.129	0.182	0.216	0.156	0.027
15	38	h	3.337	5.404	3.42	7.484	3.008	0.236	0.583	0.243	0.937	0.211
	OMI	l	2.116	2.544	2.213	2.628	0.735	0.142	0.182	0.194	0.289	0.069
		m	2.885	3.63	2.488	4.722	1.647	0.198	0.298	0.216	0.433	0.259
16	41	h	2.178	1.389	3.229	7.581	6.589	0.1447	0.101	0.217	0.891	0.973
	EGS	l	1.045	1.223	1.432	1.594	0.9	0.084	0.087	0.099	0.089	0.2384
		m	1.903	1.341	1.707	3.357	3.115	0.129	0.095	0.118	0.335	0.429

The highest dispersed industries are Beverages (IN22), Leather (IN29), Other Manufacturing Industries (IN38) where not only the highest values of each of the variables in CV measure are very high, relative to other industries but also that the mean values of CV and HH are nearer to the highest values as in Electricity, Gas and Steam (IN41) during the decade 1966-75, the period of industrial recession or retrogression, recovery and growth of post Third Five year Plan and fourth five year plan up to middle of fifth five year plan periods.

Table: 5.4.12:

CV and HH measures of variables in All States and UT of India during 1976-85:

Coefficient of Variation (C.V.) and Herfindahl Index (H.I.) of Industry Groups in All states and UTs of India during 1976-85											
Range	I.Nm &.Code	CV Results of Variables or Structural Ratios					HH results of Variables or Structural Ratios				
		Units	PK	Emp	NVA	K/L	Units	PK	Emp	NVA	K/L
h	21	1.531	1.588	1.520	1.522	1.550	0.106	0.110	0.105	0.110	0.107
l	Food	1.316	1.455	1.370	1.351	0.570	0.089	0.089	0.094	0.092	0.051
m		1.390	1.500	1.440	1.440	0.764	0.095	0.103	0.098	0.099	0.060
h	22	3.527	2.158	3.879	2.94	1.75	0.356	0.101	0.405	0.246	0.099
l	Bev	2.509	1.497	3.189	1.91	1.1	0.182	0.158	0.309	0.136	0.067
m		3.214	1.755	3.643	2.194	1.094	0.3	0.125	0.369	0.167	0.08
h	25	1.184	3.629	2.018	2.22	1.889	0.13	0.365	0.137	0.169	2.72
l	Textiles	1.611	1.977	1.654	1.882	1.467	0.117	0.143	0.115	0.135	1.71
m		1.711	2.919	1.841	2.046	1.585	0.119	0.268	0.131	0.149	2.025
h	26	2.315	2.11	2.31	2.06	1.252	0.171	0.148	0.166	0.184	0.086
l	TexPrd	1.83	1.71	1.75	1.799	1.03	0.124	0.115	0.119	0.118	0.069
m		1.83	1.84	1.891	2.03	1.07	0.141	0.124	0.131	1.839	0.076
h	27	1.416	1.53	2.51	2	0.955	0.096	0.108	0.218	0.129	0.067
l	Wood	1.264	1.381	1.384	1.492	0.49	0.085	0.094	0.091	0.99	0.048
m		1.316	1.468	1.55	1.705	0.627	0.089	0.101	0.111	0.101	0.054
h	28	1.753	1.55	1.42	1.889	4.67	0.12	0.107	0.096	0.741	0.639
l	Paper	1.522	1.23	1.27	1.478	0.769	0.111	0.084	0.086	0.099	0.058
m		1.621	1.41	1.38	1.619	1.426	0.115	0.096	0.094	0.117	0.135
h	29	3.709	3.904	3.413	3.87	2.036	0.296	0.307	0.268	0.294	0.245
l	Leather	3.062	2.77	2.941	3.136	1.038	0.212	0.196	0.211	0.232	0.085
m		3.367	3.215	3.276	3.454	1.859	0.258	0.242	0.242	0.258	0.132
h	30	2.039	2.603	2.419	3.197	2.037	0.139	0.206	0.178	0.127	0.141
l	Chem	1.524	1.786	1.528	2.067	0.793	0.103	0.111	0.125	0.144	0.062
m		1.719	2.029	1.931	2.537	1.265	0.117	0.144	0.134	0.196	0.089
h	31	1.858	3.203	2.086	5.731	1.988	0.132	0.302	0.226	0.828	0.18
l	R-P-C	1.519	1.548	1.536	1.738	1.211	0.103	0.104	0.104	0.12	0.079
m		1.687	2.202	1.936	2.598	1.639	0.106	0.168	0.14	0.243	0.112
h	32	1.76	1.731	1.348	2.01	2.77	0.12	0.099	0.091	1.76	0.245
l	NmMP	1.378	1.086	1.184	1.22	1.29	0.093	0.075	0.08	1.378	0.087
m		1.516	1.305	1.232	1.422	1.68	0.102	0.089	0.084	0.98	0.122
h	33	1.359	2.82	1.877	2.169	3.729	0.092	0.201	0.125	0.161	0.378
l	BM&A	1.216	2.31	1.6	1.676	1.452	0.084	0.174	0.111	0.114	0.08
m		1.321	2.47	1.714	1.947	2.042	0.089	0.196	0.118	0.138	0.168
h	34	1.522	3.055	2.785	2.789	1.572	0.103	0.185	0.148	0.233	0.107
l	MetPrd	1.398	2.366	2.022	2.565	0.398	0.087	0.13	0.09	0.196	0.051
m		1.417	1.843	1.329	2.696	0.691	0.964	0.16	0.131	0.226	0.061
h	36	1.725	1.663	1.883	1.925	2.638	0.118	0.11	0.213	0.146	0.213
l	MotTr	1.5	1.406	1.513	1.442	0.538	0.106	0.095	0.05	0.126	0.053

m		1.62	1.576	1.57	1.793	0.817	0.115	0.101	0.074	0.097	0.737
h	37	1.713	2.656	2.104	2.495	2.08	0.126	0.215	0.156	0.196	0.51
l	Tr.Eq.	1.541	1.9	1.75	2.002	1.384	0.104	0.133	0.118	0.143	0.097
m		1.675	2.308	1.9	2.246	1.721	0.115	0.177	0.135	0.166	0.126
h	38	2.956	2.955	2.142	4.72	2.4	0.225	0.237	0.146	0.386	0.18
l	OMI	1.785	1.799	1.586	2.62	1.07	0.132	0.115	0.118	0.143	0.062
m		2.37	2.048	1.887	2.117	1.314	0.17	0.144	123	0.211	0.096
h	41	1.357	3.89	3.089	3.001	8.452	0.092	0.377	0.383	0.667	0.886
l	EGS	1.091	0.735	1.209	1.629	0.363	0.074	0.057	0.082	0.109	0.147
m		1.355	1.267	2.278	2.179	3.336	0.082	0.106	0.185	0.161	0.444

Industries whose mean values of five variables were nearer to the highest values are Electricity, Gas and Steam (IN41) and Beverages (IN 22) while Chemicals (IN30), Rubber, Petroleum and Coal (IN31) also showed CV and HH measures of NVA higher than most other industries.

CV and HH Results of Industry Groups for all States and UTs of All India during 1986-95:

Table: 5.4.13:

CV and HH of Industry Groups of All States and UTs during 1986-95

Sl. No.	I.Nm&C	Range	CV Results of Variables or Structural Ratios					HH results of Variables or Structural Ratios				
			Units	PK	Emp	NVA	K/L	Units	PK	Emp	NVA	K/L
1	21 Food	h	1.743	2.597	1.440	1.605	1.059	0.127	0.233	0.099	0.112	0.072
		l	1.58	1.352	1.361	1.295	0.513	0.106	0.092	0.093	0.087	0.048
		m	1.633	1.573	1.401	1.456	0.726	0.116	0.114	0.096	0.100	0.056
2	22 Bev	h	4.546	1.933	4.003	2.337	1.588	0.517	0.169	0.409	0.173	1.492
		l	3.101	1.495	3.569	1.699	1.01	0.121	0.101	0.113	0.116	0.063
		m	4.016	1.638	3.748	1.866	1.048	0.399	0.118	0.355	0.132	0.218
3	25 Textile	h	1.99	2.3	1.649	1.973	1.536	0.144	0.182	0.115	0.145	0.58
		l	1.588	1.62	1.547	1.571	1.039	0.119	0.111	0.108	0.108	0.199
		m	1.178	1.92	1.609	1.756	1.194	0.126	0.142	0.1	0.122	0.286
4	26 TexPr	h	2.34	1.983	2.428	2.88	1.283	0.156	0.137	0.178	0.237	0.237
		l	1.853	1.796	1.699	2.03	0.791	0.128	0.117	0.116	0.139	0.139
		m	2.074	1.889	2.043	2.276	1.01	0.147	0.131	0.145	0.167	0.167
5	27	h	1.46	2.26	1.459	2.25	1.159	0.099	0.186	0.099	1.489	0.78

	Wood	l	1.31	1.432	1.278	1.351	0.635	0.089	0.098	0.087	0.968	0.05
		m	1.39	1.672	1.371	1.724	0.809	0.095	0.121	0.093	0.125	0.06
6	28	h	1.708	3.14	1.72	1.81	2.263	0.119	0.441	0.698	0.133	0.182
	Paper	l	1.496	1.21	1.168	1.365	0.718	0.099	0.077	0.079	0.089	0.054
		m	1.57	1.637	1.259	1.526	1.179	0.109	0.131	0.085	0.011	0.087
7	29	h	5.871	3.854	3.887	4.024	3.057	0.677	0.314	0.346	0.367	0.266
	Leathe	l	3.367	2.877	3.276	3.019	0.691	0.32	0.216	0.242	0.23	0.071
		m	4.24	3.337	3.633	3.408	1.493	0.389	0.261	0.299	0.27	0.111
8	30	h	4.024	2.573	2.189	2.599	1.737	0.366	0.302	0.169	0.219	0.07
	Chem	l	1.509	1.619	1.712	1.02	0.581	0.102	0.104	0.119	0.057	0.052
		m	1.874	2.07	1.862	2.263	0.935	0.138	0.168	0.133	0.178	0.069
9	31	h	1.577	1.731	1.544	2.282	2.129	0.108	0.122	0.105	0.175	0.162
	R-P-C	l	1.309	1.327	1.216	1.665	0.85	0.088	0.089	0.08	0.116	0.059
		m	1.416	1.559	1.315	1.986	1.66	0.096	0.106	0.088	0.145	0.083
10	32	h	1.340	2.010	1.867	2.298	1.59	0.093	0.149	0.105	0.97	0.114
	NmMP	l	1.240	1.470	1.091	1.278	0.097	0.082	0.097	0.077	0.083	0.066
		m	1.318	1.612	1.170	1.456	1.218	0.089	0.113	0.081	0.301	0.083
11	33	h	1.657	2.34	1.65	2.21	1.93	0.087	0.182	0.114	0.169	0.139
	BMt&A	l	1.144	1.59	1.41	1.69	0.764	0.077	0.109	0.095	0.116	0.06
		m	1.229	2.01	1.56	1.984	1.275	0.083	0.148	0.106	0.143	0.088
12	34	h	1.514	2.448	1.739	2.77	1.382	0.103	0.199	0.217	0.244	0.075
	MetPr	l	1.299	1.752	1.433	1.899	0.507	0.088	0.123	0.098	0.148	0.05
		m	1.416	2.029	1.602	2.279	0.776	0.096	0.151	0.11	0.179	0.061
13	36	h	1.666	1.897	1.847	2.093	0.985	0.113	0.139	0.118	0.155	0.07
	MotTr	l	1.407	1.48	1.388	1.668	0.491	0.095	0.1	0.092	0.115	0.515
		m	1.524	1.68	1.489	1.81	0.674	0.104	0.112	0.101	0.13	0.057
14	37	h	1.694	2.35	1.792	2.352	1.488	0.115	0.175	0.123	0.217	0.1
	Tr.Eq.	l	1.488	1.789	1.478	1.81	0.94	0.1	0.124	0.098	0.124	0.065
		m	1.601	2.039	1.605	2.27	1.061	0.108	0.145	0.109	0.163	0.076
15	38	h	1.968	1.968	1.682	2.369	2.27	0.143	0.15	0.123	0.205	0.192
	OMI	l	1.528	1.528	1.289	1.633	0.711	0.108	0.096	0.097	0.116	0.054
		m	1.732	1.732	1.48	1.967	1.029	0.128	0.123	0.104	0.153	0.076
16	41	h	1.355	1.717	4.735	3.426	9.389	0.092	0.121	0.312	0.237	0.894
	EGS	l	1.031	1.005	1.481	1.457	3.177	0.072	0.069	0.097	0.102	0.242
		m	1.132	1.362	2.347	2.437	6.194	0.077	0.088	0.156	0.173	0.631

Leather (IN29) and Electricity, Gas and Steam (IN41) were the most dispersed industries in this decade of 1986-95, both in terms of CV and HH and also in terms of their mean values being nearer to the highest values of the variables for both industries. Since Leather is more rural decentralized industry, it augurs well for this industry capable of being an engine of industrial growth in rural areas. EGS is an industry that is being focussed for reforms in power and water reforms for regeneration of the Indian agricultural and industrial economy. However, Units are not so well dispersed in Case of Electricity, Gas and Steam (IN41) and there is greater scope for further and greater decentralization of this industry.

In terms of employment dispersal both in terms of CV and HH, Non-Metallic Mineral Products (IN32) was the least dispersed with values around1.170 in CV and 0.081 in HH in 1986-95. This was a period of New Economic Policies, Stabilization and Economic Reforms of all sectors. Factories and PK getting dispersed but Employment getting concentrated show that in this Intermediate, employment planning did not get the requisite focus.

Wood Industry (IN27), being a agro-forestry based industry is also a cause for concern for their decentralized Units and Employment variables, HH and CV, showing high concentration.

Capital Intensity (K/L) was not so well dispersed in many industries despite other variables in those respective industries being dispersed. These industries were: Textile Products (IN26), Wood (IN27), Food (IN21), Metal Products (IN34), Manufacturing other than Transport (IN36) and Transport Equipment (IN37).

Conclusion and Policy Inferences- Period Wise:

1959-65:

Metal Products (IN34) show more relative concentrated in case of Small states Group and All States in India. But this industry did disperse well in 1986-95,

1966-75:

In both large states and small states separately in each group, capital intensive industries did not show dispersal. But in case of All states and UT being taken together, Except for three Industry groups, viz; Electricity Gas and Steam (IN41), Basic Metals and Alloys (IN33) and Machinery other than transport (IN36), most other Capital Intensive industries like Chemicals (IN30), Transport Equipment (IN37), Rubber-Petroleum-Coal (IN31), Other Manufacturing Industries (IN38) showed mean values nearer to the lowest dispersal values.

While Leather, Paper, Wood, Beverages showed high dispersal, Textile, Textile Products, Food showed mean dispersal values nearer to lowest values of the variables.

1976-85:

Transport (IN37), Textile Products (IN26) in both Small and Large States and Chemicals (IN30) in Small States showed less dispersal. Textiles showed greater dispersal in both Small States and Large States but Textiles Products showed less dispersal

1986-95:

Metal Products (IN34) showed regional dispersal in All States and Union Territories (UT).

Smaller states and UT failed in many fronts except in Textile Products, Machinery other than Transport and Transport Equipment where high dispersal is noted. But in Large States, NVA in Beverages (IN22), but Non Metallic Mineral Products (IN32) and CV of OMI (IN38) showed more concentration. In All States, Food, Wood emp, showed less dispersal. Food employment may be temporary once a long term planning of this industry comes into operation. But K/L dispersal being low in capital goods industry like Electrical and Non electrical machinery (IN36) and transport (IN37) show employment dispersal in these industries as not spreading out.

Industry Specific Policy Inferences:

In the recent two decades of policy initiatives of increasing trade, macro economic stabilization and industrial liberalization, Food and Wood are the two are exceptions being directly land based.

In All States and long term 40-year case, Beverages Industry showed higher dispersal in employment but less so in the other four variables. Improvement of labor productivity and greater marketing innovation need to be devised to help in Beverages Industry dispersal.

For the 40 year All States and Union Territories, Wood (IN27), Paper (IN28), Non-Metallic Mineral Products (IN32), Basic Metals and Alloys (IN33), Machinery other than transport, Electricity, Gas and Steam (IN41) having mean values of variables and Structural ratios nearer the lowest values, implied that these industries were relatively less dispersed over the long term.

So policy directions should enable capital goods and intermediates industries to be more decentralized/ regionally dispersed. Intermediate goods Industries must be dispersed after a careful study of linkages, both backward and forward, and institutional set up and behavior of the Indian economy. Paper and Wood Industries, being L intensive industries, have greater potential for employment absorption. Employment planning in these industries should be based on regional resource linkages.

Wood (IN27) also did well in Small states category in the first and third decades but showed more concentration in second ‘recession’ decade. But Wood (IN27) showed more concentration in each of the five variables in the All States-40year long- term category and in 1986-95 period in All States Category. This Intermediate provides inputs to Paper, Ship-Building, Housing, Transport (Trucks’ body), Sports Goods, etc. and so market demand surveys, developing marketing channels for its products, intensive agroforestry programmes, reduction of illegal felling of trees with a greater role for decentralized political authority, etc will help make this industry getting more dispersed and raising its value addition potential and make greater contribution to national income.

Food Products (IN21), a key industry linking agriculture and industry, showed less dispersal in most variables (except PK in 1959-95 in All States category) in the long term. This was supported by Food Industry (IN21) getting concentrated in 1959-95 for Large States Category. More regional Planning in an Input –Output Frame outlining its Intermediate Input Coefficient for regional skill based Industries will cause for greater dispersal in Food Industry.

Non-Metallic Mineral Products, EGS, Basic Metals and Alloys, Machinery other than Transport, being the industries that showed more relative concentration over long term in All States and UT Category implied that Greater Regional Planning in these in an Input- Output frame will bring out their growth potential that will cause for dispersal. EGS can revitalize and enhance power availability and provide much needed lateral boost to industrialization, Machinery other than transport (IN36) must be made amenable to decentralization, this being a key capital goods industry. Probably greater R&D will enable MotTr (IN36) industry to be more dispersed over the regions in the future.

Chapter 6

Regional Dispersal Analysis of Indian Industries- A Diagrammatic Presentation of Long Term Trends of Dispersal Measures of Variables and Structural Ratios

6.1 Introduction:

This Chapter 6 deals with Graphical Presentation of Long Term Trends of Dispersal Measures (HH and CV) of Five Size Variables and Structural Ratios of two-digit Indian Industries for the time period 1956-95. The Chapter comprises of 4 Sections. Each Section deals with Groups of two-digit industries identified and grouped on the basis of similar characteristics. Group 1(Consumer Non-Durables-CND) clubs Food Products Industry (IN21=IN20+IN21), Beverages Industry (IN22) and the Textile Group of Industries (IN25=IN23+IN24+IN25). All these above industries are Consumer Goods Non-Durable (CND). Group 2 comprises Intermediate and L-Intensive (ILI) Goods like Textile Products (IN26), Wood and Wood Products Industry (IN27), Paper (IN28) and Leather (IN29). Group 3 comprises of Intermediate Goods with higher Capital Intensity (IKI), viz. Chemical Industry (IN30), Rubber, Petroleum and Coal (IN31), Non-Metallic Mineral Products (IN32), Basic Metals and Alloys (IN33), Metal Products (IN34). Group 4 comprises of Capital Goods Industry (CGI) like Electrical and Electronic Machinery other than Transports (IN36=IN35+IN36), Transport Equipment Industry (IN37), Other Manufacturing Industry (IN38) and Electricity, Gas and Steam (IN41=IN40+IN41).

6.1 This Section deals with Consumer (Durable and Non-Durable) Goods like Food (IN21), Beverages (IN22) and Textiles (IN25). HH and CV Trends of each Size Variable for this Group1 is presented separately to facilitate comparable analysis to enable drawing more appropriate policy measures.

Figure 6.1.1.a. Dispersal (HH) Trend in Factories of CND Industries for 1956-95

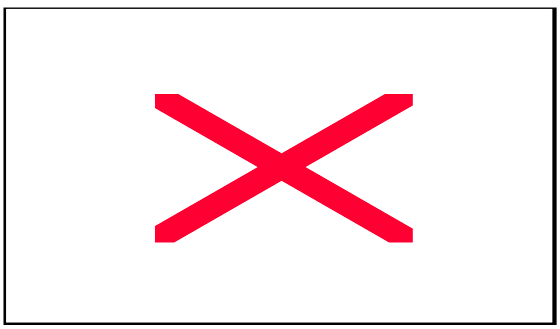
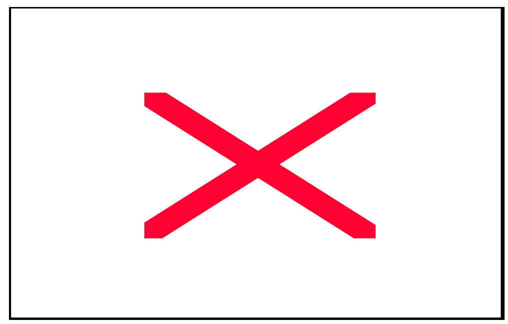


Figure 6.1.1.b: Dispersal (CV) Trend in Factories of CND Industries for 1956-95



While HH and CV measures of Food Industry (IN21) show concentration of Factories over the long period, Beverages (IN22) and Textiles (IN25) show a rising trend. The latter two are more dispersed, though marked by severe fluctuations. However, CV shows less rising trend though HH is clearly on an upward mode. Notwithstanding this, there was a fall in factories' dispersal in 1980s and again in 1992 in both HH and CV that goes on to show liberalization moves in both these times did not account for this crucial agro Industry. The planners probably hoped that trickle-down effects of prosperity and entrepreneur-ship in industrial and trade sectors will filter down to the agricultural and agro-industrial sectors.

Figure 6.1.2.a: Dispersal (HH) Trend in PK in CND Industries for 1956-95

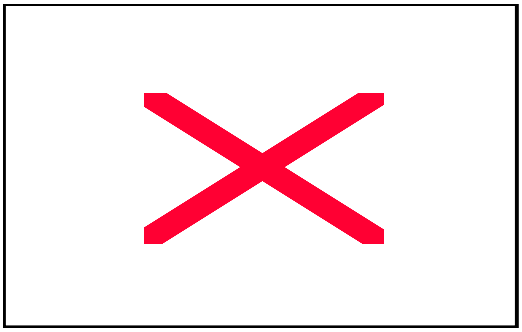
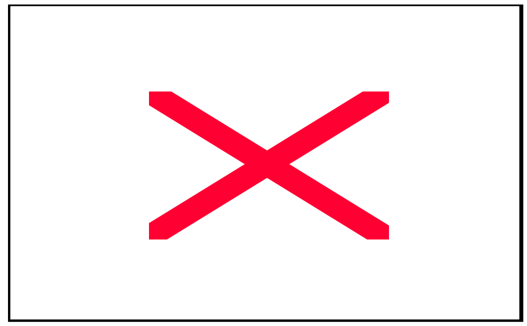


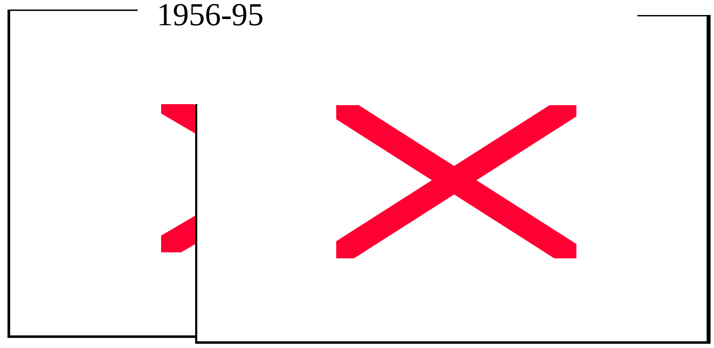
Figure 6.1.2.b: Dispersal (CV) Trend in PK in CND Industries 1956-95



Similar trends noticed in both measures of HH and CV for Productive Capital in Food Industry with all the three Consumer Non-Durable showing marked signs of more concentration from 1980 onwards. The increasing tendencies towards greater dispersal was marked both in the Pre- Retrogression and the Recovery Phases, then greater concentration (more marked in HH) in late 1970s depression when oil prices shot up and there was political instability at the Centre.

Figure 6.1.3.a: Dispersal (HH) Trend in CND Industries for 1956-95

Figure 6.1.3.b: Dispersal (CV) Trend in In CND Industries for 1956-95

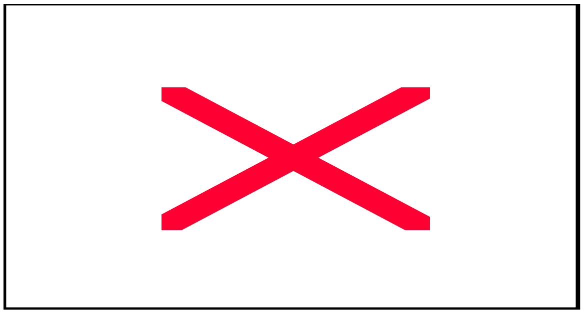


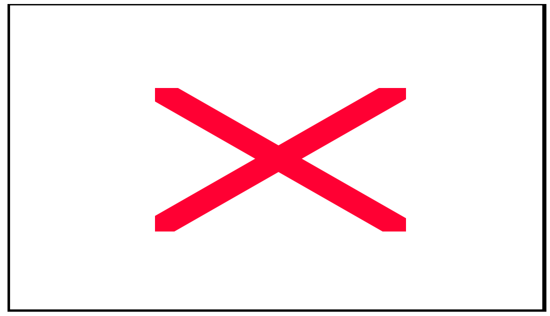
Employment is concentrated in Food Industry for all of the 40years, except of high in mid1970s during 4th and 5th Plan period when special attention was being given to Small Scale Industries and Backward Area Development.

Employment in Beverages and Textiles however show higher dispersal, though marked by great fluctuations. Both started low when they were concentrated and then dispersed. Dispersal marked downward trend during retrogression and again in mid 1980s when Rajiv Gandhi Government laid much focus on imports of machine goods and luxury items.

Figure 6.1.4.a: Dispersal (HH) Trends in NVA in CND Industries for 1956-95

Figure 6.1.4.b: Dispersal (CV) Trend in NVA in CND Industries for 1956-95





NVA Dispersal in Food Industry followed similar pattern to its Inputs Dispersal pattern. However, the sharp spurts in dispersal got manifested a little earlier in 1968-9 since gestation period in this industry is much less. Yet, a small spurts noticed during Rajiv Gandhi liberalization measures of mid 1980s and NarasimhaRao-Manmohan Singh reforms of 1992-3 showed that liberalization impulses quickly impacted the output growth and dispersal than inputs.

Figure 6.1.5.a: Dispersal (HH) Trend in K/L in CND Industry for 1956-95

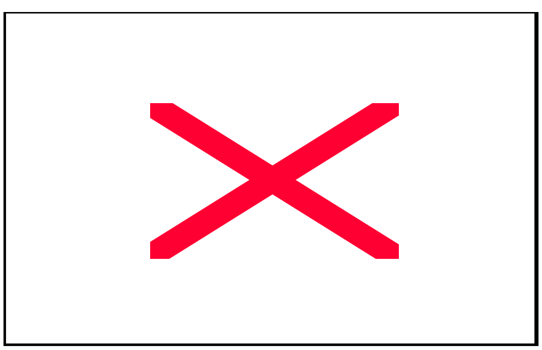
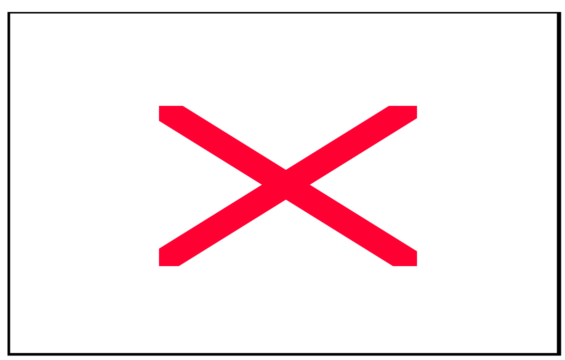


Figure 6.1.5.b: Dispersal (CV) Trend in CND Industry for 1956-95



While Food Industry showed less fluctuations due to low technological diffusion and so lesser increases in capital intensity in this industry which has followed not very radically innovative methods to boost production. Beverages also showing similar culture of technological diffusion, did increase very high in mid 1980s, largely due to import led growth and demonstration effect in consumption patterns led by the urban rich. Textiles however followed large jumps and falls in dispersal due to the unsustainable nature of liberalization processes that did not matched high capital injections in spurts with less capacity for labor entry or exit.

6.2 This Section shows trend of the Size Variables and Structural Ratio of K/L in Group 2 Industries of Intermediates that are more Labor Intensive in character comprising of Textile Products (IN26), Wood (IN27), Paper (IN28) and Leather (IN29).

Figure 6.2.1.a: Dispersal (HH) Trends in Factories in ILI Industries for 1956-95

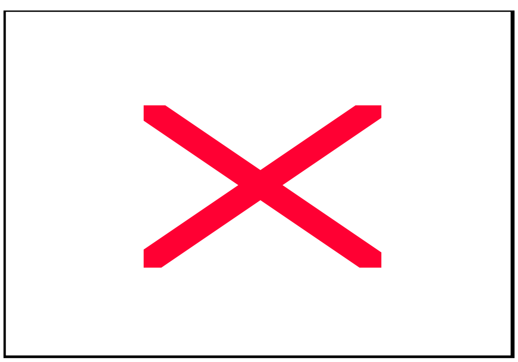
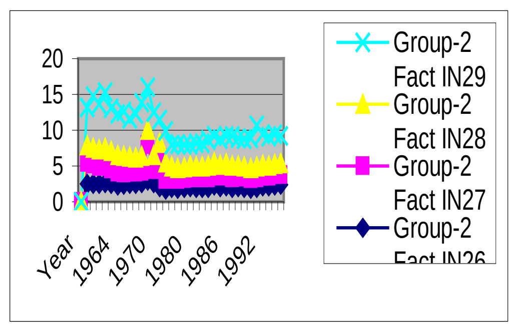


Figure 6.2.1.b: Dispersal (CV) Trends in Factories in ILI Industries for 1956-95



This group of industries show severe fluctuations, more prominently in HH. Textile Products show more of concentration. Leather shows high dispersal in both HH and CV. The mid-seventies and mid eighties show relatively more movement towards dispersal, due to growth inducing policies undertaken in those periods. The advent of the 4th Plan in 1970s that laid stress on removal of regional disparities effected more dispersal in industry. The post 1990s spurt in Leather could be due to liberalization and reform measures of the government that brought about much optimism for industrial progress and economic development, though our data is limited to 1995, when the impact of reforms had not made itself felt in much of the industries and the economy as a whole.

Figure 6.2.2.a: Dispersal (HH) Trend in PK for ILI Industries for 1956-95

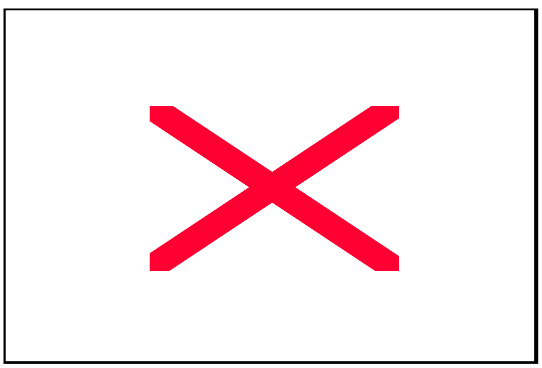
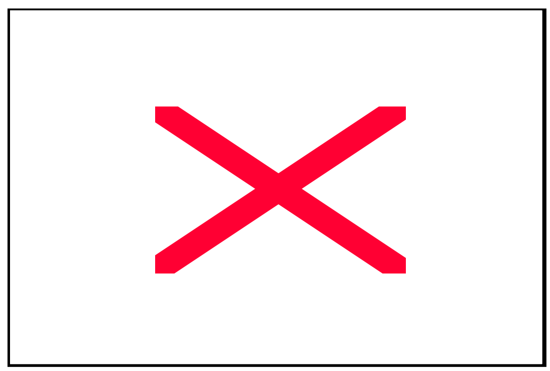


Figure 6.2.2.b: Dispersal (CV) Trend in PK for ILI Industries for 1956-95



High dispersal of PK noticed in mid 1970s and mid 1980s, the first due to Recovery and focus on small scale industries development and second phase as an outcome of post Indira Gandhi assassination import liberalization drive. Wood and Paper dispersal or lack of it, move at tandem largely due to direct input-output dependency relationship in this two industries. Hence the need for planning for these two industries considering their nature of a structurally dependent relationship

Figure 6.2.3.a: Dispersal (HH) Trend in Employment in ILI Industries for 1956-95

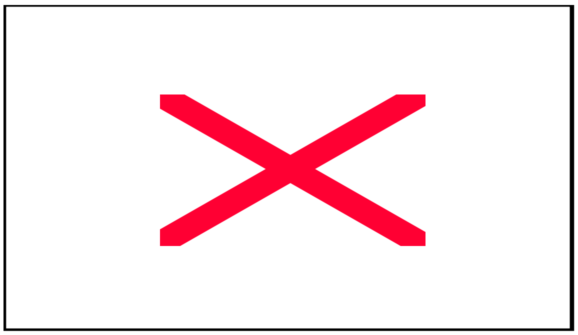
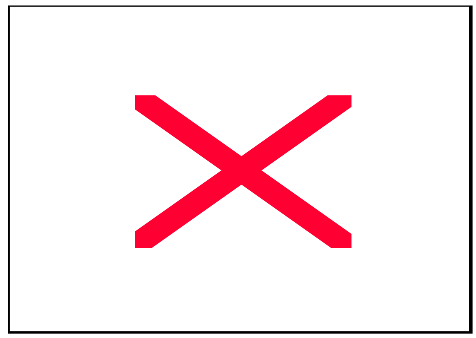


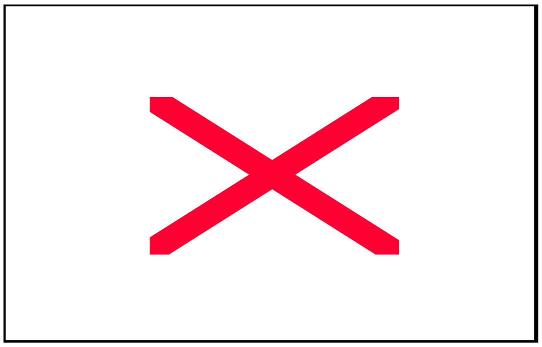
Figure 6.2.3.b: Dispersal (CV) Trend in Employment in ILI Industries for 1956-95

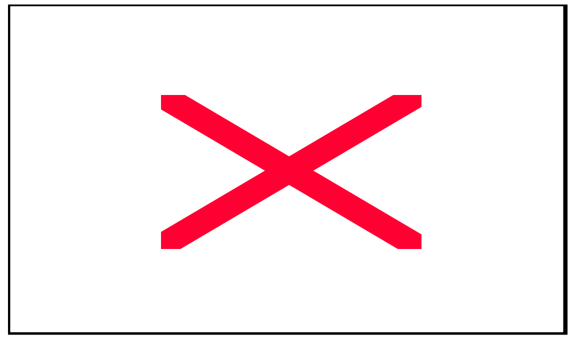


Dispersal of employment is highest in Leather but concentration noticed in Textile Products (IN26). But Paper showed more employment dispersal than Wood especially in the 4th Plan. However, Wood and Paper Industries show greater clubbing than Textile Products Industry or Leather Industry. However, despite higher Labor Intensiveness of production of these Intermediates, employment dispersal is less than expected. The Labor absorption capacity in these industries being high, a more rigorous employment planning with a period wise monitoring mechanism is needed. Productivity and wage relationships in these industries that depend so much on greater Labor Intensification is also necessary for proper employment planning in them if economy is to reap the rewards of a just industrialization leading to more equitable income distribution.

Figure 6.2.a: Dispersal HH) in NVA in ILI Industries for 1956-95

Figure 6.2.4.b: Dispersal (CV) Trend in NVA in ILI Industries for 1956-95





High dispersal of NVA in Leather compared to other three industries of the group in mid 1970s.But NVA more concentrated in all through the 40years except this brief mid 1970s phase. This concentration noticed in all the 4 Intermediates showing a distinct lack of planning for Intermediates of the nature of more Labor- intensive production. NVA tending towards more concentration than dispersal is due to lack of employment planning and not treating employment planning as an addendum of growth. NVA in Textile Products is lagging as much as NVA in Textiles as seen in Sec.6.2.

Figure 6.2.5.a: Dispersal (HH) of K/L in ILI Industries for 1956-95

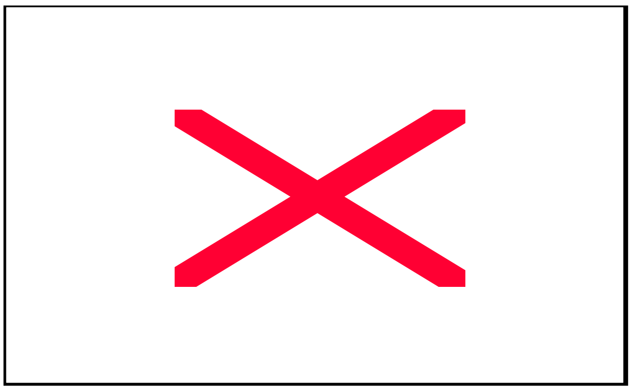
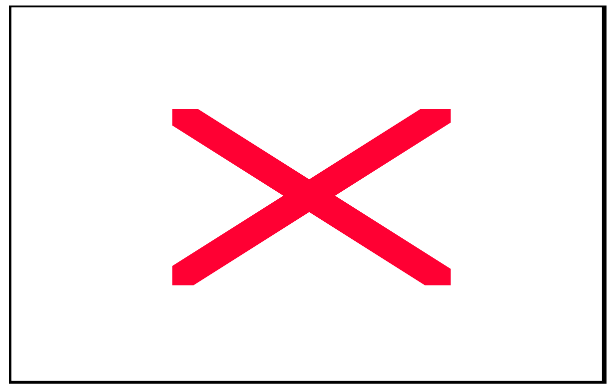


Figure 6.2.5.b: Dispersal (CV) of K/L in ILI Industries for 1956-95



Severe fluctuations in dispersal of Capital Intensity noticed in both HH and CV measures. There have been high phases of dispersal in Pre 1964, then 1968 when there was an infusion of more capital during recovery phase but falling in dispersal again. Thus capital infusion for expediting recovery phase must have been internal trade related or it led to conspicuous consumption feeding on pent-up demand or Labor absorption was instantaneous, leading to fall in K/L dispersal. There was a relatively stable phase in 1977-1986, but later periods marked by high fluctuations in dispersal figures. Textile Products showed more concentration in K/L and marked by absence of severe fluctuations.

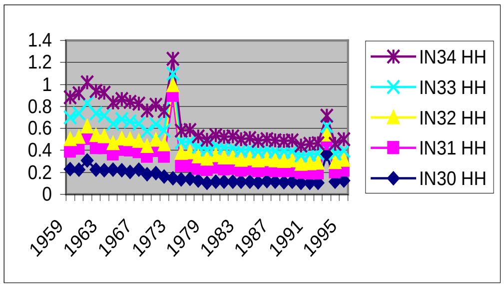
Section 6.3:

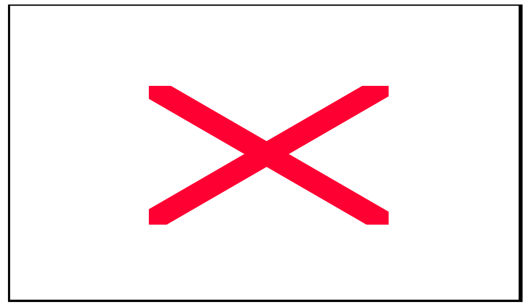
This section shows long term trends in Factories for Group 3 or IKI Industries comprising Capital Good Intermediates with higher capital intensity in the nature of production. They are

Chemicals (IN30), Rubber-Petroleum and Coal (IN31), Non metallic Mineral Products (In32), Basic Metals and Alloys (IN33), Metal Products (IN34)

Figure 6.3.1.a: Dispersal (HH) Trend in Factories For IKI Industries for 1956-95

Figure 6.3.2.b: Dispersal (CV) Trend in Factories for IKI Industries for 1956-95

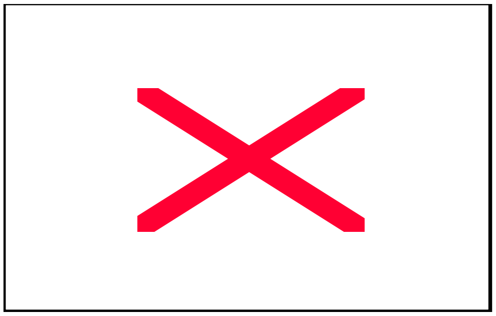


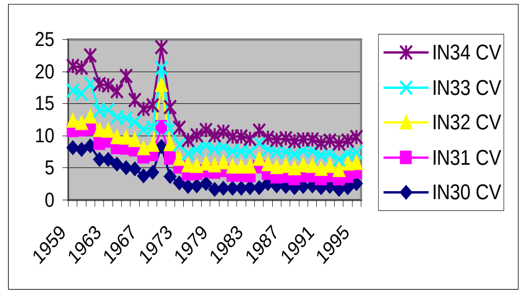


While all industries show concentration in Factories, Metal Products (IN34) start from high dispersal. The Pre retrogression period marked a tendency for greater dispersal in these Capital Intensive Intermediates, that was cut short by the retrogression. While industries tended to get concentrated, the mid- 1970s was marked by a brief recovery cycle that was short lived. Then all these 5 industries concentrated, except in 1992 phase, it showed a tendency to disperse.

Figure 6.3.2.a: Dispersal (HH) Trend for PK For IKI Industries for 1956-95.

Figure 6.3.2.b: Dispersal (CV) Trend for PK for IKI Industries for 1956-95

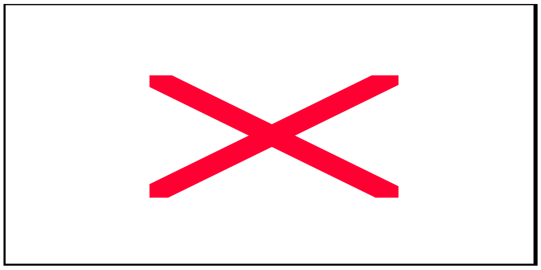


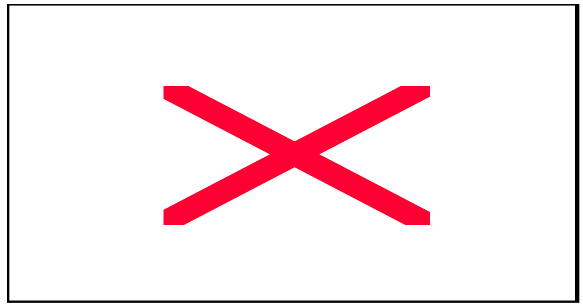


Both Line Diagrams of Dispersal Trends of Productive Capital for Group 3 Industries show similar trends. Chemicals show high concentration. Metal Products show dispersal with high spurt in mid seventies. Less dispersal in IKI group is due to relative neglect of planning for dispersal of Prodcutive Capital.

Figure 6.3.3.a: Dispersal (HH) Trend in Employment in IKI Industries for 1956-95

Figure 6.3.3.b: Dispersal (CV) Trend in Employment in IKI Industries for 1956-95

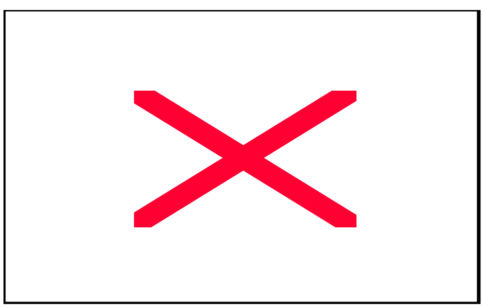


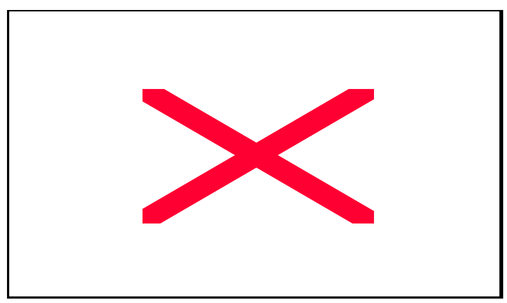


There is more of employment concentration in this group of industries though Metal Products show increases in sixties before settling down towards concentration as other metal and mineral intermediates were showing no signs of dispersal. Concentration in Intermediates in Employment shows low commitment for a comprehensive planning for Intremediate expansion and integrated with other industries, esp. K-goods Industries.

Figure 6.3.4.a: Dispersal (HH) Trend in NVA for IKI Industries for 1956-95

Figure 6.3.4.b: Dispersal (CV) in NVA for IKI Industries for 1956-95

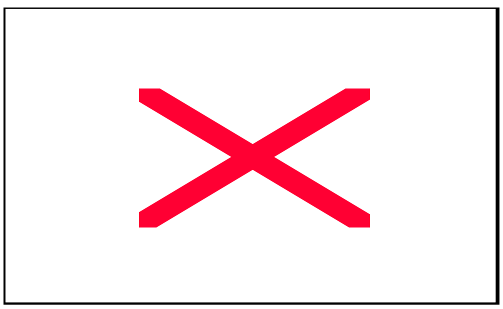


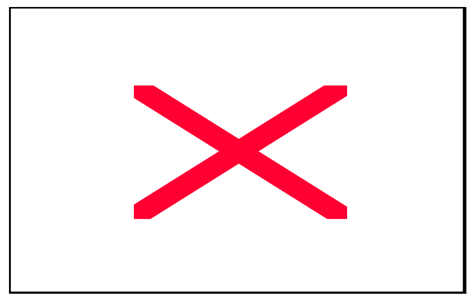


Severe fluctuations noticed in each of these 5 intermediate industries and being K- intensive in nature, has been less amenable to dispersal. Concentration is seen in long term for IKI Industries. But Metal Products showed higher relative dispersal with Basic Metals closely following it. Chemicals are concentrated that shows that the potential of this sunrise indusry of 1970s and 1980s has not been adequaltely tapped. RPC (IN31) seems to follow Chemcials route to concentration, both being being mutually dependent to a certain extent and also being similarly Kintensive in nature.

Figure 6.3.5.a:
Dispersal (HH) Trend
IN K/L in IKI

Figure 6.3.5.b: Dispersal (CV)
Trend in K/L in IKI Industries
for
1956-95





Similar patterns as above for this group of industries also noticed here. Severe fluctuations are seen in dispersal patterns with CV measure showing fluctuations in all industries more prominently. IKI Industries are concentrating in K/L in long term. Economies of Scale are not being reaped in this IKI Group as NVA and Employment showed more concetration than Factories. Over and above this, K/L is less dispersed, though regularity in spurts is evidence that capital infusion has not helped employment dispersal in these Intermediates.

Section 6. 4:

This Section charts long term trends in dispersal measures of HH and CV for capital goods industries like Electrical and Electronics machinery, Transport Equipment and Parts, Other Manufacturing and Electricity, Gas and Steam (IN41).

Figure 6.4.1.a: Dispersal (HH) Trend in Factories in K-Goods Industries for 1956-95

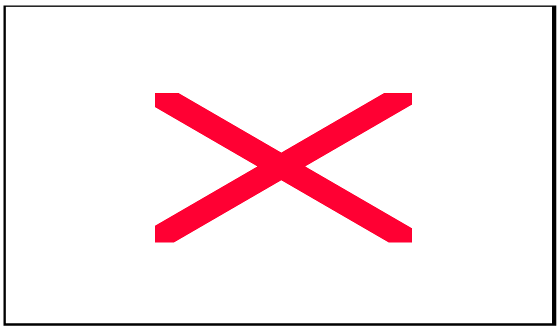
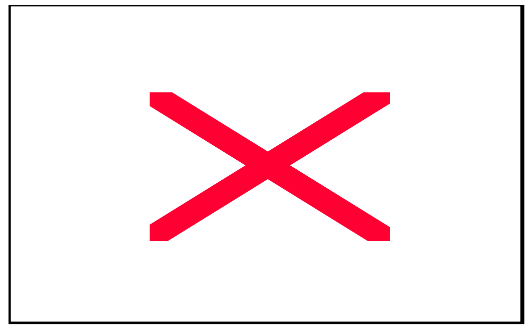


Figure 6.4.1.b: Dispersal (CV) in Factories in K-Goods Industries for 1956-95

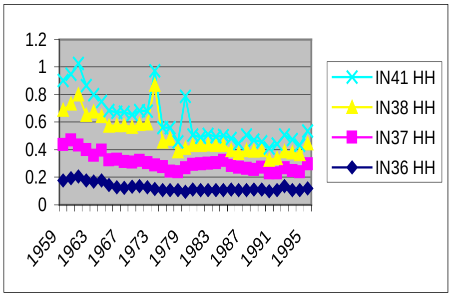


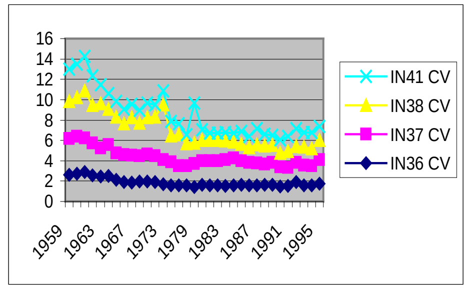
Electrical and Electronics Machinery (IN36) show high concentration in both HH and CV. Electricity, Gas and Steam (IN41) start from higher dispersal but come down to concentration due to lack of dispersal in other supporting high investment industries. Of late after 1992, EGS show movement towards dispersal as an outcome of new growth impulses released due to liberalization measures for industry, trade and the economy as a whole.

Transport showed a dip in dispersal in recession hit period of mid sixties. Other manufacturing industries due to its miscellany nature of type of industries comprising it, show a more chequered graph , though still moving towards concentration. This industry capable of high Lintensiveness needs a clear policy thrust that would enable it to act a leading sector for growth in an economy like India’s.

Figure 6.4.2.a: Dispersal (HH) in PK for K-goods Industries for 1956-95

Figure 6.4.2.b: Dispersal (CV) in PK for K-goods Industries for 1956-95





Electrical and Non Electrical Machinery other Than Transport (IN36) show high and uniform concentration in both HH and CV. This is an industry that is more related to the development in the knowledge based economy, akin to the software industry of latter decades. Progress, growth or dispersal in this industry IN36 is dependent on R&D development and development of the education sector, a service or tertiary sector. The recent upsurge in service originated GDP does not give much weightage to this and even then it is difficult to deduce the dispersal fortunes and potential of IN36. Transport Equipment Industry (IN37), more related to fortunes of other sectors and industries, shows greater dispersal than IN36. This being a key infrastructure industry, the relative negligence meted out to infrastructure sector is seen in the post recession or recovery phase of Indian industry, when this industry struggled to get more dispersed. But after 1979, it shows more vibrancy and spread and this phase continued till 1987-88 when imbalances in economic indicators, leading to bop crisis, fiscal crisis etc, hence leading to economic reforms, did reduce the spread of this Industry (IN37) again, till post 1992 reform phase brought in a concomitant awareness of the importance of this sector.

OMI (IN38) shows high dispersal but given to fluctuations as does the EGS (IN41). Despite high dispersal in the beginning phase, these 2industries found it difficult to sustain its spread and grew more concentrated with post 1992-93 saw quicker and more immediate response in terms of higher dispersal, which is a good sign for Indian Industrial development and economic progress.

Figure 6.4.3.a: Dispersal (HH) Trend in Emp in K-goods for 1956-95

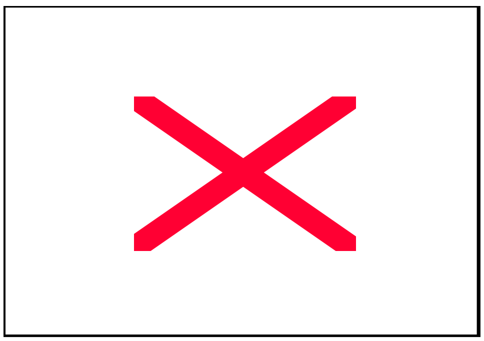
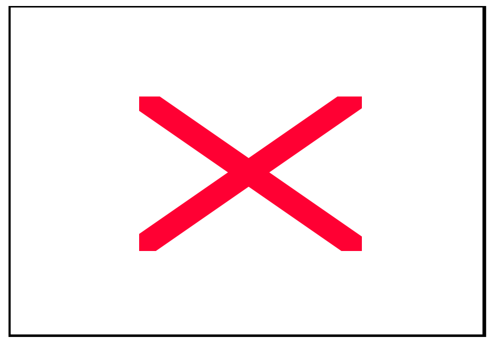


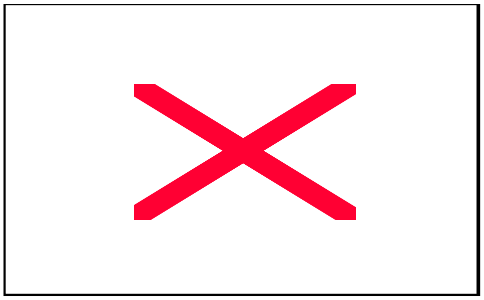
Figure 6.4.3.b: Dispersal (CV) Trend in Employment in K-goods Industries for 1956-95

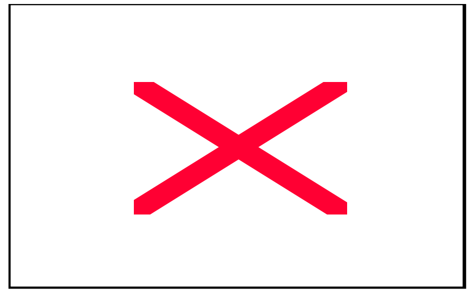


Employment in capital goods industry is more concentrated than seen in PK or NVA. Yet maximum dispersal is noticed in EGS (IN41) which does not show smooth downward sloping line as in other three industries. OMI trying to be nearer EGS trend line, did not really follow it and showed more concentration in 1980s. That showed the nature of OMI industry, which despite being capital intensive caters to the direct consumption needs as regards the need and usage of capital goods of this type say instrumentation, surgical instruments, agricultural implements, electronics goods , etc that caters to a market segment, quite distinct from heavy machine goods or the Type for EGS that required heavier capital investment. IN37 dispersal in employment followed more towards and bunches with OMI group, especially in later 1980s, showing trade related concerns had gained prominence.

Figure 6.4.4.a: Dispersal (HH) Trend in NVA for K-goods for 1956-95Industries for 1956-95

Figure 6.4.4.b: Dispersal (CV) Trend in NVA for K-goods Industries (1956-95)

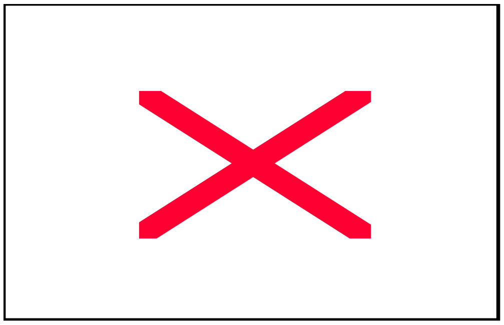


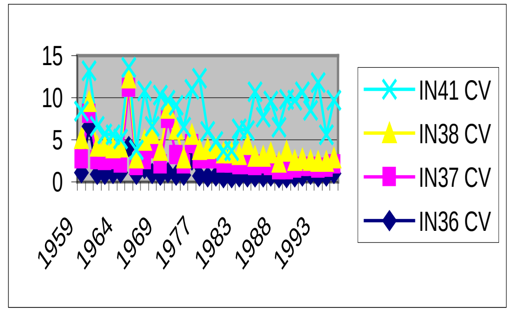


HH dispersal in NVA show similar trends for all industries of this group with high fluctuations in mid seventies and ultimately settling down after 1980s. CV trend show concentration in all, though initial dispersal is high in EGS. OMI Nva pattern is similar to other variables and ratios for this industry. EGS follows patterns of other industries in this group, except OMI. Thus all capital goods industries show greater concentration in outputs, if not fully in inputs of K and L

Figure 6.4.5.a: Dispersal (HH) Trend in K/L in K-goods Industries for 1956-95

Figure 6.4.5.b: Dispersal (CV) Trend in K/L in K-goods Industries for 1956-95





K/L dispersal shows fluctuations in CV, though HH is more clear- cut. EGS is more dispersed in K/L which is good sign when the Indian economy is seeking more decentralization of the power sector. Electrical and Electronic machinery is highly concentrated in K/L and is clearly in need of more clear policy inputs as to dispersal. This group showed reaping of scale economies more than IKI group.

Section 6. 5:

Summary Results and Policy recommendations:

While Consumer and User and Intermediates show greater dispersal, Capital Goods and Capital goods Intermediate are more concentrated in long term Indian Industrialization.

Beverages, Leather, Metal Products and EGS in each of the respective Groups show a contrary trend vis a vis trends in variables and structural ratios of their respective groups.

More clear-cut policy formulations await Chemicals, Electrical and Non electrical Machinery, Textile Products for each of these to act as leading sectors of growth.

Williamson hypothesis of Growth leading to dispersal in long run, is proved in Food Products, EGS, Textiles, Metal Products and mostly IKI group.

Wood (IN27), Textile Products (IN26), Transport equipment (IN37) and Electrical and electronic machinery (IN36) prove Self-perpetuation hypothesis. Dispersal in most of K-goods group and Self- Perpetuation in IN36 from K-goods Industry group. However, concentration comes about due to low growth and industry-specific and region specific policy packages to boost their key factor use to raise efficiency will help in greater dispersal of Indian Industry.

Chapter-7

Economic Impact Analysis of Contributions of Total Factor Productivity (TFP), Partial Productivities, Capital Intensity on Regional Dispersal of Industries: 1956-95

7.1Introduction:

This Chapter6 deals with contributions of relevant explanatory variables, viz. Total Factor productivity, Partial Productivities of Factors, Capital Intensity on regional dispersal measures of Herfindahl Index (HI) and Coefficient of Variation (CV) of Net Value Added (NVA) and Employment (NW) of two-digit industry groups of India, for 40 years period of 1956-95 and separately for each of the 10 years periods(4) covering successive five-year plans, including Plan holiday, industrial recession/retrogression, recovery and growth periods. This study is an analysis of tracing nature of and extent of causal relationships(b estimate) in the estimate of simple linear regressions of Regional dispersal on each of the explanatory variables, mentioned above separately estimated for tracing causal relationships distinctly for each of the dependent variables, as otherwise multiple regressions estimations posed problems of single multiple regressions estimation that provided very low R^2, $\bar{R}^{2,}$, F and student t statistic and high standard errors,, hence could not be pursued even stepwise multiple regressions estimations for all possible combinations as to their contributions to regional dispersal. The dependent variable was distinguished in 4 specifications estimated considering HH of Net Value Added and of Employment and CV of employment and NVA as to account for each industry’s each of the regional dispersal measures regressed on each of five explanatory variables. This analysis alone brings out distinct contributions as desired for the rate of economic impact analysis. This Chapter is divided into five Sections, each for the cited time periods. For each time period, while detailed Tables are presented to point out how results of short term periods have a bearing or corresponds to long term results.

7.2 Impact Analysis of Relevant Explanatory Variables on Regional Dispersal for 1956-65

In this Section, we regress HH nva, HH emp on TFP-S, K/L, K-productivity and L-productivity for 1956-65

Table: 7.2.a

Regional Dispersal(HH and CV) of Industries' output(NVA) in response to TFP by Solow (at current prices) 1956-1965
Specification: HH nva = a +b(TFP-S); CV nva = a+ b(TFP-S)

Ind. Name	IN Code	Dispersal Measures		HH nva	HH nva	HH nva	CV nva	CV nva	CV nva
	IN Code	CV nva	HH nva	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food	21	1.001	0.001	29	1.479	6.580	25	4.938	156.307
Bev'rage	22	3.633	0.249	26	1.057	21.080	26	1.091	85.020
Textiles	25	2.656	0.186	27	1.022	3.146	37	0.834	3.147
Tex Prd	26	3.338	0.279	32	0.807	2.238	32	0.819	2.313
Wood	27	0.312	3.922	22	0.729	8.052	34	0.813	3.843
Paper	28	2.395	0.163	25	0.727	3.858	36	0.277	1.967
Leather	29	6.560	0.442	21	0.401	6.991	33	0.183	2.576
Chemical	30	6.092	0.434	36	0.4	1.649	27	0.14	0.039
R-P-C	31	4.068	0.319	41	0.274	0.284	30	0.138	0.086
Nm MPrd	32	1.670	0.117	37	0.235	0.186	41	0.129	0.022
BM&A	33	3.824	0.291	33	0.207	2.678	28	0.099	0.029
Mel Prd	34	3.722	0.284	28	0.152	1.650	38	0.098	0.157
MotTr	36	3.737	0.334	34	0.148	0.110	22	0.058	0.259
Tr.Eq.	37	7.662	0.788	30	0.126	0.021	31	0.05	0.004
OMI	38	4.821	0.339	31	0.061	0.083	21	0.029	0.008
EGS	41	2.790	0.195	38	0.018	0.006	29	0.011	0.001

Textile Products (IN26), Non-Metallic Mineral Products (32), Textiles (25), show higher influence of TFP on NVA. Since $(b/r)^2$ is high, less dispersal/ concentration in these industries are due to TFPG.

Rubber-Petroleum-Coal (IN31), Food Products (IN21), Paper (IN28), Other Manufacturing Industries (38), Basic Metals and Alloys (33) show least influence of TFP on NVA. Food (IN21) and Basic Metals and Alloys (IN33) show concentration with high b /r meaning that non-dispersal is better influenced by TFPG, viz; in Food and an Intermediate like Basic Metals, TFPG is not influencing for dispersal. This is an interesting finding. Rubber-Petroleum-Coal (IN31), Other Manufacturing Industries (IN38) show low b /r implying that dispersal is not due to TFPG but due to some other causes.

Table: 7.2.b.
Regional dispersal of Indian Industries' employment in response to TFP by Solow for 1956-65
Specification: HH emp = a+b (TFP); CV emp = a+b (TFP)

	Measures of Industrial		Cvemp	Cvemp	Cvemp	Hhemp	Hhemp	Hhemp

	Dispersal								
In. Nm	IN Code	CV emp	HH emp	IN Code	$\hat{\beta}$	(b /r)2	IN Code	$\hat{\beta}$	(b /r)2
1	2	3	4	5	6	7	8	9	10
Food	21	1.001	0.001	32	2.442	47.317	33	2.09	7.531
Bevrges	22	6.087	0.491	22	1.588	11.675	29	1.494	5.583
Textiles	25	2.608	0.182	25	1.406	10.802	36	1.338	4.42
Tex Prd	26	2.63	0.176	26	1.133	1.422	22	1.123	7.248
Wood	27	2.32	0.154	33	1.19	1.386	27	0.666	0.713
Paper	28	2.176	0.146	28	1.119	16.966	31	0.532	1.993
Leather	29	7.53	0.468	31	1.111	2.047	25	0.428	1.124
Chemical	30	5.633	0.389	21	1.108	1.103	32	0.388	0.528
R-P-C	31	2.961	0.207	30	1.011	7.957	26	0.342	0.625
Nm MPrd	32	1.504	0.107	29	1.066	5.919	37	0.316	2.774
BM&A	33	3.25	0.231	36	0.919	1.287	41	0.286	0.135
Met Prd	34	3.376	0.246	34	0.594	1.066	28	0.265	0.062
MotTr	36	2.497	0.171	27	0.531	0.411	38	0.146	0.52
Tr.Eq.	37	6.523	0.597	37	0.308	2.018	30	0.115	0.082
OMI	38	3.94	0.291	38	0.246	0.132	34	0.035	0.012
EGS	41	2.339	0.151	41	0.217	0.192	21	0.032	0.008

Beverages (IN22), Textiles (IN25), Textile Products (IN26), Basic Metals and Alloys (IN33), Leather (IN29), NmMP (IN32), Rubber-Petroleum-Coal (IN31) showed greater response in employment dispersal to influence of TFP.

While dispersal has been good, $(b/r)^2$ has been higher. This reveals that regional dispersal of these industries has been brought by TFPG.

The least influence is seen in Food (IN21), Electricity, Gas and Steam (IN41), Other Manufacturing Industries (IN38), Transport Equipment (IN37). Here, $(b/r)^2$ is low implying that dispersal/concentration of employment in these L-intensive and /or K-intensive industries is not due to TFPG in this first decade of industrialization .

Table: 7.2.c
Regional Dispersal(CV) of Industries' output(NVA) in response to Capital intensity (at current prices) 1956-65:
Specification:
CV nva=a +b(K/L); HH nva= a+b(K/L)

		Dispersal Measures		CV nva	CV nva	CV nva	HH nva	HH nva	HH nva
Ind.Nm	IN Code	HHNVA	CVNVA	Industry	$\hat{\beta}$	(b /r)2	Industry	$\hat{\beta}$	(b /r)2
1	2	3	4	5	6	7	8	9	10
Food	21	0.001	5.376	29	2.595	30.333	21	2.717	15.875
Bev'	22	0.249	3.633	21	1.828	7.296	30	1.649	7.118
Textiles	25	0.186	2.656	37	1.558	2.911	34	1.297	6.571
Tex Prd	26	0.279	3.338	33	1.546	6.908	33	0.913	3.688
Wood	27	0.312	3.922	32	1.417	10.404	25	0.57	1.633
Paper	28	0.163	2.395	30	1.358	5.657	38	0.567	1.546
Leather	29	0.442	6.56	36	1.098	2.208	37	0.499	2.075
Chemic	30	0.434	6.092	34	1.064	1.791	26	0.475	1.465
R-P-C	31	0.319	4.068	25	1.013	2.133	36	0.452	0.376
NM MP	32	0.117	1.67	31	0.419	0.554	29	0.448	1.761
BM&A	33	0.291	3.824	26	0.312	0.338	41	0.276	0.134
M. Prd	34	0.284	3.722	38	0.275	0.204	32	0.107	0.032
MotTr	36	0.334	3.737	28	0.231	0.087	27	0.087	0.023
Tr.Eq.	37	0.788	7.662	22	0.071	0.022	28	0.078	0.006
OMI	38	0.339	4.821	41	0.07	0.008	31	0.045	0.018
EGS	41	0.195	2.79	27	0.025	0.002	22	0.005	0.002

The industries' with higher influences are Textiles (IN25), Metal Products (IN34), Chemicals (IN30), Food Products (IN21), Basic Metals and Alloys (IN33) and Non-Metallic Mineral Products (IN32). $(b/r)^2$ being high, dispersal of NVA occurs through influence of K/L in the long run.

The least influence of K/L on NVA is found in Beverages (IN22), EGS (IN41), Wood (IN27), Paper (IN28). $(b/ r)^2$ being low in all industries, it follows concentration is due to low K/L in long run.

Table: 7.2.d:

Regional Dispersal(CV) of Industries' employment in response to Capital intensity (at current prices) 1956-1965

Specification: CV emp = a+ b(K/L); HH emp= a+ b(K/L)

	Dispersal Measures			CV emp	CV emp	CV emp	HH emp	HH emp	HH emp
Ind.Nam	IN Code	CV Emp	HH emp	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
1	9	7	8	1	2	3	4	5	6
Food	21	1.001	0.001	25	1.857	31.637	37	2.616	6.983
Bev'	22	6.087	0.491	38	1.815	7.538	21	1.974	6.812
Textiles	25	2.608	0.182	37	1.373	1.914	33	0.731	1.713
Tex Prd	26	2.630	0.176	26	1.366	4.923	27	0.625	1.289
Wood	27	2.320	0.154	21	1.125	2.213	38	0.523	0.613
Paper	28	2.176	0.146	33	0.998	3.172	32	0.516	1.325
Leather	29	7.530	0.468	27	0.79	2.364	25	0.505	0.802
Chemical	30	5.633	0.389	29	0.604	0.518	34	0.375	11.719
R-P-C	31	2.961	0.207	32	0.601	3.969	28	0.36	1.641
Nm MPrd	32	1.504	0.107	30	0.246	0.747	41	0.356	0.524
BM&A	33	3.250	0.231	36	0.229	0.243	22	0.351	0.147
Met. Prd	34	3.376	0.246	41	0.169	0.155	30	0.25	0.710
MotTr	36	2.497	0.171	34	0.16	0.088	26	0.194	0.352
Tr.Eq.	37	6.523	0.597	28	0.072	0.028	36	0.145	0.121
OMI	38	3.940	0.291	31	0.068	0.033	29	0.078	0.047
EGS	41	2.339	0.151	22	0.034	0.006	31	0.061	0.031

Textile (IN25), Other Manufacturing Industries (IN38), Wood (IN27), Basic Metals and Alloys (IN33), Non-Metallic Mineral Products (IN32), show higher K/L influence. In Textiles (IN25), Other Manufacturing Industries (IN38), Non-Metallic Mineral Products (IN32), Basic Metals and Alloys (IN33) and Wood (IN27), high $(b/r)^2$ implies that in each of these industries influence of K/L did not affect dispersal in any discernible way.

The Least K/L influence is in Beverages (IN22), Rubber, Petroleum and Coal (IN31), Machinery other than Transport (IN36), Leather (IN29), Electricity, and Steam (IN41), Metal Products (IN34), Paper (IN28). In Beverages (IN22) and Paper (IN28), dispersal in Beverage is not due to K/L as b /r is low, whereas in Paper, concentration in this period is due to K/L influence. Thus in Paper, K/L influence did not bring about dispersal in this first period of industrialization. In Leather (IN29), dispersal has not been due to influence of K/L.

Table: 7.2.e.

Regional Dispersal(HH) of Industries' output(NVA) in response to Capital productivity (at current prices) 1956-1965;

Specification: HH nva = a+ b(K-productivity) ; CV nva = a+ b(K-productivity)

		Dispersal measure		HH nva	HH nva	HH nva	CV nva	CV nva	CV nva
Ind.Nam	IN Code	HHNVA	CVNVA	Industry	$\hat{\beta}$	(b /r)2	Industry	$\hat{\beta}$	(b /r)2
1	2	3	4	5	6	7	8	9	10
Food	21	0.328	2.000	31	0.453	0.946	38	1.931	11.580
Bev'	22	0.249	3.633	30	0.452	1.353	25	1.786	10.776
Textiles	25	0.186	2.656	38	0.428	0.496	41	1.374	11.654
Tex Prd	26	0.279	3.338	22	0.335	0.249	31	1.255	8.036
Wood	27	0.312	3.922	25	0.263	0.238	29	1.232	18.739
Paper	28	0.163	2.395	41	0.206	0.276	28	1.152	3.206
Leather	29	0.442	6.560	29	0.105	0.054	34	0.814	1.140
Chemical	30	0.434	6.092	28	0.081	0.656	36	0.733	1.613
R-P-C	31	0.319	4.068	37	0.075	0.029	21	0.351	0.520
Nm MPrd	32	0.117	1.670	36	0.074	0.014	30	0.328	0.681
BM&A	33	0.291	3.824	26	0.074	0.015	27	0.214	0.175
Met. Prd	34	0.284	3.722	34	0.06	0.009	22	0.158	1.248
MotTr	36	0.334	3.737	32	0.033	0.009	26	0.11	0.032
Tr.Eq.	37	0.788	7.662	21	0.023	0.002	33	0.031	0.003
OMI	38	0.339	4.821	33	0.022	0.002	32	0.016	0.001
EGS	41	0.195	2.790	27	0.021	0.001	37	0.015	0.002

High influence of Capital Productivity on NVA is noticed in Rubber, Petroleum and Coal (IN31), Other Manufacturing Industries (IN38), Textiles (IN25), Electricity, Gas and Steam (IN41), Leather (IN29). In all these industries, dispersal in these industries was due to influence of capital productivity on NVA.

Least influence of capital productivity on NVA dispersal is in Wood (IN27), Transport (IN37), Non-Metallic Mineral Products (IN32), Basic Metals and Alloys (IN33), Textile Products (IN26). High dispersal in these industries was not due to capital productivity influence.

Table: 7.2.f.

Regional Dispersal of Industries' employment in response to Capital productivity (at current prices) 1956-1965
Specification: CV emp= a +b(K-productivity); HH emp = a +b(K-productivity)

	Measures of Industrial Dispersal			CV emp	CV emp	CV emp	HH emp	HH emp	HH emp
Ind.Name	IN Code	CVemp	HH emp	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food Pro	21	1.001	0.001	28	1.953	11.318	25	1.654	6.943
Beverages	22	6.087	0.491	25	1.591	6.750	22	0.643	0.458
Textiles	25	2.608	0.182	30	1.571	2.840	30	0.521	0.703
Textile Prd	26	2.630	0.176	22	1.207	6.253	21	0.482	0.362
Wood	27	2.320	0.154	41	1.035	5.822	28	0.438	0.702
Paper	28	2.176	0.146	29	0.776	2.641	31	0.189	0.812
Leather	29	7.530	0.468	32	0.531	0.540	26	0.074	0.021
Chemical	30	5.633	0.389	26	0.4	0.300	27	0.073	0.013
Ru-Pet-Co	31	2.961	0.207	38	0.369	0.605	29	0.067	0.018
Nm MPrd	32	1.504	0.107	27	0.314	0.253	34	0.064	0.216
BM&A	33	3.250	0.231	21	0.247	0.310	41	0.058	0.017
Metal Prd	34	3.376	0.246	33	0.236	0.066	32	0.041	0.003
MotTr	36	2.497	0.171	37	0.205	0.271	37	0.036	0.007
Tr.Eq.	37	6.523	0.597	31	0.15	0.388	38	0.032	0.003
OMI	38	3.940	0.291	34	0.142	0.133	36	0.023	0.002
EGS	41	2.339	0.151	36	0.039	0.005	33	0.017	0.000

Capital Productivity's influence on dispersal of employment is higher in Paper (IN28), Beverages (IN22), Textiles (IN25), Chemicals (IN30). $(b/r)^2$ is high in all of the above industries except in Chemicals (IN30). So dispersal in Chemicals came about not due to influence of capital productivity in this initial period, as the build up for this industry to be one of the sunrise industries of 1970s has not started. The rest being Labor intensive in nature, employment dispersal was aided by capital productivity growth.

The Low influence industries were in Machinery other than transport (IN36), Basic Metals and Alloys (IN33), Transport Equipment (IN37). In Basic Metals and Alloys (IN33) characterized by low $(b/r)^2$, dispersal did not accrue due to influence of Capital productivity. In others, i.e. IN36 and IN37, both being high capital intensive industries, influence of capital productivity was low on employment dispersal, especially in this first period of industrialization.

Table 7.2.g

Regional Dispersal(CV) of Industries' output(NVA) in response to Labor productivity (at current prices) 1956-65;Specification:CV nva = a +b(L-productivity); HH nva= a+b (L-Productivity)

Ind.Nam	Measures of Industrial Dispersal			CV nva	CV nva	CV nva	HH nva	HH nva	HH nva
	IN Code	HH nva	CV nva	IN Code	$\hat{\beta}$	$(b/r)^2$	IN Code	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food Pro	21	0.454	1.332	32	3.1	65.822	38	1.978	19.760
Beverag	22	0.249	3.633	36	1.821	14.355	29	1.261	14.325
Textiles	25	0.186	2.656	34	1.636	12.391	31	0.864	15.552
Text Prd	26	0.279	3.338	31	1.454	9.925	25	0.822	1.856
Wood	27	0.312	3.922	38	1.256	4.431	30	0.806	13.534
Paper	28	0.163	2.395	25	1.249	4.575	41	0.604	1.614
Leather	29	0.442	6.560	28	1.099	7.946	34	0.491	1.153
Chemical	30	0.434	6.092	26	1.064	24.087	32	0.371	0.348
Ru-Pet-C	31	0.319	4.068	41	0.969	3.504	33	0.359	0.207
Nm MPrd	32	0.117	1.670	33	0.898	1.335	28	0.212	0.202
BM&A	33	0.291	3.824	22	0.605	0.515	21	0.156	0.035
MetPrd	34	0.284	3.722	37	0.579	3.020	27	0.086	0.045
MotTr	36	0.334	3.737	30	0.454	7.361	36	0.064	0.019
Tr.Eq.	37	0.788	7.662	21	0.439	0.272	26	0.058	0.105
OMI	38	0.339	4.821	27	0.161	0.220	22	0.045	0.003
EGS	41	0.195	2.790	29	0.013	0.004	37	0.041	0.010

The Higher influences of Labor productivity on NVA dispersal are seen in Metal Products (IN34), Rubber, Petroleum and Coal (IN31), Other Manufacturing Industries (IN38), Textiles (IN25). With high b /r, dispersal in IN31, 34, 38/concentration in textiles is on account of Labor productivity influence.

The lower influences of labor productivity on NVA in this first decade of planed industrialization are in Transport Equipment (IN37), Beverages (IN22), Wood (IN27), Food Products (IN21). In Food and Beverages, $(b/r)^2$ low, Concentration in Food and Dispersal in Beverages was not due to influence of labor productivity on NVA dispersal. Thus labor intensive firms as Food and Beverages did not respond to labor productivity influence. But in Wood and Transport, $(b/r)^2$ being low, dispersal was not affected by labor productivity influence.

Table:7.2.h

Regional Dispersal(HH) of Industries' employment in response to Labor productivity (at current prices) 1956-1965

Specification: HH emp = a + b(L-productivity); CV emp = a +b(L-productivity)

	Measures of Industrial Dispersal			HH emp	HH emp	HH emp	CV emp	CV emp	CV emp
Ind.Name	IN Code	CV emp	HH emp	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food Pro	21	1.001	0.001	26	2.327	9.055	38	1.987	6.591
Beverages	22	6.087	0.491	29	1.732	5.976	36	1.954	6.538
Textiles	25	2.608	0.182	28	1.588	**105.073**	22	1.905	9.402
Tex. Prd	26	2.630	0.176	32	1.479	4.215	34	1.339	5.050
Wood	27	2.320	0.154	36	1.366	3.168	28	1.321	91.844
Paper	28	2.176	0.146	33	1.136	14.665	41	1.311	3.201
Leather	29	7.530	0.468	21	1.095	3.172	37	1.308	4.054
Chemical	30	5.633	0.389	41	1.042	1.625	30	1.297	3.298
Ru-P -Co	31	2.961	0.207	37	0.92	2.187	32	1.266	2.888
Nm MPrd	32	1.504	0.107	25	0.8	1.139	29	1.237	2.767
BM&A	33	3.250	0.231	34	0.551	3.943	31	1.06	6.208
Met Prd	34	3.376	0.246	38	0.544	0.435	25	1.017	1.569
MotTr	36	2.497	0.171	31	0.196	0.198	27	0.514	0.751
Tr.Eq.	37	6.523	0.597	30	0.148	0.040	26	0.501	20.917
OMI	38	3.940	0.291	22	0.074	0.008	21	0.451	0.503
EGS	41	2.339	0.151	27	0.021	0.001	33	0.013	0.003

Higher influences of Labor Productivity on employment dispersal in this decade are in Paper (IN28), Non-Metallic Mineral Products (IN32), Machinery other than transport (IN36), Electricity, Gas and Steam (IN41). With high b /r, dispersal is due to L-productivity influence on employment dispersal.

Lower influences of Labor productivity on employment dispersal are in Wood (IN27), Rubber, Petroleum and Coal (IN31). But the process of dispersal in the early phase of industrialization was not due to influence of L-productivity.

Summary (1956-65):

While TFPG influence did not bring about NVA dispersal, TFPG did influence dispersal of employment in both labor intensive and capital intensive industries. Employment dispersal or non- dispersal thereof has not shown yielding to K/L influence, though NVA dispersal has been noticed to be affected by growth of K/L. Capital productivity influence affected both NVA and employment dispersal, though in Chemicals (IN30) employment showed more concentration despite influence of capital productivity.

Labor intensive industries like Textiles got concentrated due to influence of L-productivity, but in EGS (IN41) and MotTr (IN36), both capital-intensive, Labor productivity did influence employment dispersal. This was an encouraging sign for Indian industries' to move towards greater equity in dispersal process, through setting up capital goods and capital-intensive industries. The policy recommendation being Labor productivity needs to be enhanced even in capital goods industries for objective of equitable regional distribution of industries to be achieved thus serving the cause of regional equity and balanced regional development.

7.2 Impact Analysis of Relevant Explanatory Variables on Regional Dispersal Measures for the period 1966-75

This Section presents regression results showing the response of each of the various explanatory variables on HH and CV Measures of NVA and of Employment for Indian Industries for the period 1966-75.

Table: 7.3.a.

Regional Dispersal(HH&CV)of Industries' output(NVA)in response to TFP by Solow
(at current prices) 1966-1975
Specification: HH nva = a +b(TFP-S): CV nva = a +b(TFP-S)

Ind. Name	IN Code	Dispersal Measures		HH Nva	HH nva	HH Nva	CV nva	CV nva	CV nva
		CV nva	HH Nva	Industry	$\hat{\beta}$	(b /r)2	Industry	$\hat{\beta}$	(b /r)2
1	2	3	4	5	6	7	8	9	10
Food	21	1.440	0.114	28	2.911	32.220	31	1.54	28.922
Bev'rage	22	3.565	0.224	30	1.915	7.819	29	1.234	1.993
Textiles	25	3.049	0.287	41	1.539	24.169	25	1.134	53.582
Tex Prd	26	3.665	0.184	26	1.392	6.568	21	1.009	2.767
Wood	27	3.319	0.307	31	1.37	12.513	34	0.917	3.036
Paper	28	2.545	0.221	25	1.307	51.765	30	0.841	1.016
Leather	29	6.789	0.47	33	1.164	4.413	41	0.536	1.122
Chemical	30	3.659	0.256	34	0.941	3.232	32	0.165	0.036
R-P-C	31	3.199	0.242	29	0.425	1.212	26	0.162	0.106
Nm MPrd	32	1.665	0.128	21	0.274	1.831	28	0.146	0.110
BM&A	33	2.739	0.216	38	0.235	0.321	38	0.124	0.025
Metal Prd	34	3.384	0.278	37	0.111	0.051	22	0.08	0.037
MotTr	36	2.322	0.164	22	0.074	0.017	27	0.065	0.004
Tr.Eq.	37	2.268	0.156	27	0.065	0.004	33	0.049	0.013
OMI	38	2.521	0.184	36	0.042	0.007	36	0.02	0.001
EGS	41	1.876	0.128	32	0.025	0.007	37	0.019	0.001

Chemicals (IN30), Rubber-Petroleum (31), Textiles (IN25), Electricity, Gas and Steam (IN41), show higher influence of TFP on dispersal of NVA. $(b/r)^2$ is high and so TFPG influence is established as a cause for NVA dispersal in Capital goods, Intermediate and Consumer Industries even in the recessionary period.

The least influence of TFP on NVA dispersal is seen in Machinery other than Transport (IN36), Non-Metallic Mineral Products (IN32), Transport (IN37), Wood (IN27), Beverages (IN22), Other Manufacturing Industries (IN38). $(b/r)^2$ is low implied dispersal was due to TFPG in Wood, Beverages, MotTr, NmMP, Transport.

Table: 7.3.b:

Regional Dispersal of Industries' Employment in response to TFP by Solow for (at current prices) 1966-75

Specification: HH emp =a +b(TFPS), CV emp= a +b (TFP-S).

		Dispersal measures		CVemp	CVemp	CVemp	HHemp	HHemp	HHemp
Ind. Name	IN Code	CV Emp	HH Emp	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
1	9	7	8	1	2	3	4	5	6
Food Pro	21	1.675	0.132	21	2.749	38.167	30	0.929	2.936
Beverag	22	5.259	0.440	29	2.668	203.378	41	0.788	1.651
Textiles	25	2.28	0.166	31	2.623	33.562	22	0.786	3.510
TextPrd	26	2.833	0.197	28	2.285	39.555	31	0.75	2.961
Wood	27	1.954	0.132	33	1.912	15.964	21	0.651	0.609
Paper	28	2.42	0.1901	27	1.862	3.767	25	0.493	0.135
Leather	29	5.55	0.352	25	1.049	1.769	36	0.456	7.557
Chemical	30	3.837	0.271	30	0.845	5.805	37	0.451	1.937
R-P-C	31	2.363	0.162	38	0.634	1.905	32	0.241	1.056
Nm MPrd	32	2.01	0.179	41	0.613	2.147	28	0.214	0.314
BM&A	33	2.296	0.16	22	0.586	5.203	26	0.212	0.175
MetPrd	34	2.785	0.208	34	0.505	2.298	29	0.141	0.173
MotTr	36	2.158	0.153	36	0.251	0.863	33	0.082	5.057
Tr.Eq.	37	2.8	0.216	32	0.217	0.230	38	0.053	0.009
OMI	38	3.359	0.273	37	0.047	0.071	27	0.05	0.045
EGS	41	1.93	0.117	26	0.013	0.001	34	0.029	0.208

Food Products (IN21), Textiles (IN25), Chemicals (IN30), Rubber-Petroleum-Coal (IN31), Electricity, Gas and Steam (IN41) show higher influence of TFP on employment dispersal. In case of Food (IN21), Chemicals, (IN30) Rubber-Petroleum-Coal (IN31) and Electricity, Gas and Steam (IN41), high b/r implied TFPG caused for employment dispersal.

The least influence of TFP on employment dispersal is noticed in case of Textile Products (IN26), Wood (IN27), Non-Metallic Mineral Products (IN32), Basic Metals and Alloys (IN33), Metal Products (IN34), Manufacturing other than Transport (IN36), Transport Equipment (IN37). In Textile Products (IN26), Wood (IN27) and Transport Equipment (IN37), $(b/r)^2$ is lower implying dispersal not influenced by TFPG in this period.

In Non-Metallic Mineral Products (In32), Basic Metals and Alloys (IN33), Metal Products (IN34), Machinery other than Transport (IN36) $(b/r)^2$ higher implying even in capital goods industry and intermediates with higher capital intensive-ness, recession was a cause for low TFPG influence and not so high dispersal.

Table: 7.3.c Regional Dispersal of Industries' Output (NVA) in Response to TFP by Solow For 1966-75 (at Current Prices)
Specification: CV nva = a+b(K/L); HH nva = a+ b(K/L)

		Dispersal Measures		CV nva	CV nva	CV nva	HH nva	HH nva	HH nva
Ind.Name	IN code	HH nva	Cv nva	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food	21	0.114	1.440	22	1.804	18.921	21	3.367	12.513
Bev'	22	0.224	3.565	29	1.521	21.421	34	1.474	38.798
Textiles	25	0.287	3.049	33	1.51	4.079	33	1.198	2.540
Tex Prd	26	0.184	3.665	21	1.14	1.859	26	0.842	2.541
Wood	27	0.307	3.319	26	0.883	5.268	22	0.708	1.223
Paper	28	0.221	2.545	41	0.869	4.468	29	0.297	0.152
Leather	29	0.47	6.789	27	0.491	2.172	32	0.202	0.358
Chemical	30	0.256	3.659	37	0.411	0.329	27	0.17	0.172
R-P-C	31	0.242	3.199	34	0.311	0.624	30	0.131	0.111
Nm MPrd	32	0.128	1.665	28	0.114	0.083	28	0.114	0.117
BM&A	33	0.216	2.739	31	0.093	0.786	37	0.105	0.029
Met. Prd	34	0.278	3.384	36	0.051	0.010	38	0.097	0.013
MotTr	36	0.164	2.322	38	0.033	0.002	25	0.029	0.007
Tr.Eq.	37	0.156	2.268	25	0.019	0.001	31	0.018	0.003
OMI	38	0.184	2.521	32	0.016	0.002	36	0.018	0.001
EGS	41	0.128	1.876	30	0.011	0.002	41	0.024	0.004

Higher influences of K/L on dispersal of NVA are in Beverages (IN22), Food Products (IN21), Metal Products (IN34), Basic Metals and Alloys (IN33), Textile Products (IN26). Basic Metals and Alloys (IN33) show higher $(b/r)^2$ implying that in this decade of recession, User and Intermediate goods Industries did show K/L being cause for NVA dispersal. Food was more concentrated and so high K/L influence could not bring about dispersal of Food Industry.

Least influences are in Chemicals (IN30), Other Manufacturing Industries (IN38), Textiles (IN25), Machinery other than Transport (IN36), Rubber, Petroleum and Coal (IN31), Transport Equipment (IN37). In Rubber (IN31), despite being a Capital Intensive industry, showed dispersal but not due to K/L.

Low $(b/r)^2$ in Chemicals, but dispersal being higher in Chemicals, this must been a prelude to this industry becoming a sunshine industry in 1970s and 1980s, despite K/L's minimal influence on dispersal per se. Textiles (IN25) showed more dispersal than Textile

Products or MotTr (IN36); thus recession did not directly impact this Consumer Non Durable Industry and NVA dispersal was not due to contribution of K/L

Table:7.3.d

Regional Dispersal(CV) of Industries' employment in response to Capital intensity (at current prices) 1966-75
Specification: CV emp = a +b(K/L); HH emp= a+ b(K/L)

		Dispersal Measures		CV emp	CV emp	CV emp	HH emp	HH emp	HH emp
Ind.Nam	IN Code	CV Emp	HH Emp	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
1	9	7	8	1	2	3	4	5	6
Food	21	1.675	0.132	25	2.509	35.366	27	0.729	1.293
Bev'	22	5.259	0.440	36	1.405	22.432	31	0.633	28.621
Textiles	25	2.28	0.166	38	1.257	3.198	36	0.507	0.851
Tex Prd	26	2.833	0.197	33	1.232	2.701	41	0.361	0.582
Wood	27	1.954	0.132	32	1.011	1.129	25	0.339	0.771
Paper	28	2.42	0.1901	21	0.635	0.437	34	0.323	0.130
Leather	29	5.55	0.352	41	0.541	1.644	22	0.272	0.477
Chemical	30	3.837	0.271	22	0.47	0.321	26	0.198	0.087
R-P-C	31	2.363	0.162	27	0.469	0.565	38	0.181	0.234
Nm MPrd	32	2.01	0.179	37	0.467	1.154	29	0.18	0.309
BM&A	33	2.296	0.16	28	0.442	2.171	30	0.174	0.452
Met. Prd	34	2.785	0.208	31	0.442	0.909	33	0.129	0.130
MotTr	36	2.158	0.153	26	0.384	0.452	28	0.125	0.822
Tr.Eq.	37	2.8	0.216	30	0.322	0.447	21	0.091	0.080
OMI	38	3.359	0.273	34	0.313	0.852	37	0.068	0.029
EGS	41	1.93	0.117	29	0.144	0.026	32	0.031	0.005

The Higher K/L influence on dispersal of Employment is in this first period of planned industrialization is seen in Textiles (IN25), Machinery other than Transport (IN36), Electricity, Gas and Steam (IN41). In the three industries dispersal due to K/L influence.

The Low K/L influence is in Leather (IN29), Chemicals (IN30), Textile Products (IN26), Paper (IN28). Paper and Chemicals got dispersed despite minimal or negligent K/L influence.

Table:7.3.e

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Regional Dispersal(HH) of Industries' output(NVA) in response to Capital

productivity (at current prices)1966-1975
Specification: HH nva = a+ b(K-productivity); CV nva= a+b (K-productivity)

	Dispersal Measures			HH nva	HH nva	HH nva	CV nva	CV nva	CV nva
Ind.Nam	IN Code	HH nva	CV nva	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food	21	0.114	1.440	30	0.51	0.781	31	1.228	22.176
Bev'	22	0.224	3.565	29	0.509	1.234	22	1.216	22.404
Textiles	25	0.287	3.049	21	0.399	9.950	29	1.134	17.861
Tex Prd	26	0.184	3.665	28	0.334	0.907	37	0.611	0.789
Wood	27	0.307	3.319	27	0.263	0.494	26	0.87	3.674
Paper	28	0.221	2.545	31	0.259	0.919	34	0.45	0.306
Leather	29	0.47	6.789	25	0.217	0.329	21	0.238	2.575
Chemical	30	0.256	3.659	22	0.14	0.059	32	0.174	0.206
R-P-C	31	0.242	3.199	38	0.117	0.123	27	0.1	0.116
Nm MPrd	32	0.128	1.665	41	0.08	0.012	41	0.098	0.013
BM&A	33	0.216	2.739	37	0.044	0.006	33	0.084	0.014
Met. Prd	34	0.278	3.384	33	0.033	0.002	28	0.047	0.007
MotTr	36	0.164	2.322	26	0.027	0.004	25	0.037	0.008
Tr.Eq.	37	0.156	2.268	36	0.031	0.002	30	0.033	0.003
OMI	38	0.184	2.521	34	0.017	0.001	38	0.019	0.001
EGS	41	0.128	1.876	32	0.011	0.001	36	0.011	0.001

In 1966-75, influence of K-productivity on NVA dispersal was higher in Leather (IN29), Chemicals (IN30), Rubber, Petroleum and Coal (IN31). Thus despite recession, NVA of Intermediates dispersed due to capital productivity influence.

The Least influence of capital productivity is in Non-Metallic Mineral Products (IN32), Machinery other than transport (IN36), Other Manufacturing Industries (IN38), Basic Metals and Alloys (IN33) and low $(b/r)^2$ revealed low influence of capital productivity was not conducive to dispersal of these capital intensive industries.

Table:7.3.f

Regional Dispersal(CV) of Industries' employment in response to Capital productivity (at current prices) 1966-1975
Specification: CV emp= a +b(K-productivity); HH Emp = a +b(K-productivity)

	Measures of Industrial Dispersal			CV emp	CV emp	CV emp	HH emp	HH emp	HH emp
Ind.Name	IN Code	CV emp	HH emp	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food Pro	21	1.675	0.132	31	2.916	28.063	29	0.643	2.7563
Beverages	22	5.259	0.440	22	2.483	14.610	21	0.48	2.1943
Textiles	25	2.28	0.166	38	1.684	13.009	31	0.401	0.4030
Textile Prd	26	2.833	0.197	41	1.654	5.759	38	0.391	0.9676
Wood	27	1.954	0.132	29	0.655	10.215	30	0.361	0.8408
Paper	28	2.42	0.19	34	0.353	0.737	41	0.314	0.2809
Leather	29	5.55	0.352	30	0.322	0.405	37	0.275	0.3361
Chemical	30	3.837	0.271	27	0.305	3.322	22	0.266	0.1877
Ru-P-Co	31	2.363	0.162	37	0.243	0.492	36	0.214	0.1832
Nm MPrd	32	2.01	0.179	36	0.117	6.845	28	0.087	0.0470
BM&A	33	2.296	0.16	28	0.114	0.033	26	0.052	0.5408
Met Prd	34	2.785	0.208	25	0.105	0.055	25	0.041	0.0139
MotTr	36	2.158	0.153	32	0.105	0.068	32	0.036	0.0061
Tr.Eq.	37	2.8	0.216	26	0.032	0.341	33	0.036	0.0105
OMI	38	3.359	0.273	21	0.029	0.008	27	0.031	0.0458
EGS	41	1.93	0.117	33	0.014	0.001	34	0.019	0.0036

Higher influence of capital productivity in industries like Rubber, Petroleum and Coal (IN31), Leather (IN29), Electricity (IN41), Other Manufacturing Industries (IN38) on employment dispersal and higher $(b/r)^2$ meant dispersal in these mostly capital intensive industries was due to influence of capital productivity.

Low influence of capital productivity on employment dispersal were in Basic Metals and Alloys (IN33), Textile Products (IN26), Non-Metallic Mineral Products (IN32), Textiles (IN25), Paper (IN28), Machinery other than Manufacturing (IN36). But dispersal process in these was not affected by little influence of capital productivity.

Table: 7.2.g

Regional Dispersal(CV) of Industries' output(NVA) in response to Labor productivity (at current prices) 1966-75
Specification: CV nva =a+b(L-productivity); HH nva = a +b(L-Productivity)

Ind.Name	Measures of Industrial Dispersal			CV nva	CV nva	CV nva	HH nva	HH nva	HH nva
	IN Code	HH nva	CV nva	Industry	$\hat{\beta}$	(b /r)2	IN Code	$\hat{\beta}$	(b /r)2
1	2	3	4	5	6	7	8	9	10
Food Pro	21	0.114	1.440	21	1.161	35.472	38	0.896	2.212
Beverages	22	0.224	3.565	41	0.945	1.393	21	0.454	3.889
Textiles	25	0.287	3.049	32	0.788	4.889	41	0.32	0.175
Textile Prd	26	0.184	3.665	27	0.716	1.038	27	0.186	0.186
Wood	27	0.307	3.319	37	0.59	0.744	26	0.186	0.066
Paper	28	0.221	2.545	28	0.436	1.777	25	0.113	0.073
Leather	29	0.47	6.789	38	0.134	0.020	22	0.101	0.132
Chemical	30	0.256	3.659	22	0.12	0.178	33	0.092	0.020
Ru-Pet-Co	31	0.242	3.199	34	0.078	0.011	34	0.091	0.022
Nm MPrd	32	0.128	1.665	25	0.053	0.004	37	0.09	0.023
BM&A	33	0.216	2.739	30	0.039	0.138	31	0.074	0.365
Metal Prd	34	0.278	3.384	33	0.038	0.003	30	0.06	0.008
MotTr	36	0.164	2.322	29	0.034	0.006	28	0.032	0.011
Tr.Eq.	37	0.156	2.268	31	0.031	0.007	32	0.027	0.005
OMI	38	0.184	2.521	26	0.026	0.001	36	0.011	0.000
EGS	41	0.128	1.876	36	0.012	0.013	29	0.01	0.003

Higher influences of Labor Productivity on dispersal of NVA are in Food Products (IN21), Electricity, Gas and Steam (IN41), Wood (IN27). While $(b/r)^2$ is relatively high, it did not bring about dispersal in Food. Wood being L-intensive, could be better dispersed due to Labor productivity influence, despite the climate of recession. In EGS, high b /r did not bring about higher dispersal.

The lower influences of labor productivity on NVA dispersal are in Machinery other than Transport (IN36), Leather (IN29), Rubber, Petroleum and Coal (IN31), Basic Metals and Alloys (IN33), Chemicals (IN30). While dispersal in these industries are higher, $(b/r)^2$ in HH is relatively high in Rubber-petroleum and Coal (IN31). Thus dispersal of these industries is however less due to Labor productivity except in RPC (IN31).

Table: 7.3.h

Regional Dispersal(HH& CV) of Industries' employment in response to Labor

productivity (at current prices) 1966-1975
Specification: HH emp = a +b(L-productivity); CV emp= a +b(L-productivity)

	Measures of Industrial Dispersal			HH emp	HH emp	HH emp	CV emp	CV emp	CV emp
Industry	IN Code	CVemp	HH emp	IN Code	$\hat{\beta}$	$(b/r)^2$	IN Code	$\hat{\beta}$	$(b/r)^2$
1	2	3		5	6	7	8	9	10
Food Pro	21	1.675	0.132	36	1.393	22.304	21	1.985	12.275
Beverages	22	5.259	0.440	41	1.01	10.100	41	1.924	11.390
Textiles	25	2.28	0.166	28	0.666	9.437	33	0.877	7.256
Textile Prd	26	2.833	0.197	22	0.631	0.773	36	0.864	2.629
Wood	27	1.954	0.132	33	0.61	0.737	31	0.797	1.784
Paper	28	2.42	0.19	38	0.597	2.256	34	0.746	0.608
Leather	29	5.55	0.352	27	0.596	0.920	30	0.515	1.153
Chemical	30	3.837	0.271	21	0.367	0.159	29	0.364	0.679
Ru-Pet-Co	31	2.363	0.162	26	0.345	0.561	25	0.297	0.175
Nm MPrd	32	2.01	0.179	25	0.339	0.771	22	0.246	0.696
BM&A	33	2.296	0.16	32	0.333	0.331	28	0.236	0.052
Metal Prd	34	2.785	0.208	34	0.213	0.405	32	0.151	0.145
MotTr	36	2.158	0.153	29	0.178	0.308	26	0.073	0.010
Tr.Eq.	37	2.8	0.216	37	0.162	0.151	38	0.072	0.006
OMI	38	3.359	0.273	30	0.032	0.003	27	0.018	0.009
EGS	41	1.93	0.117	31	0.018	0.001	37	0.011	0.002

In this period, the Higher influences of Labor Productivity on employment dispersal are in Food (IN21), Electricity (IN41), Machinery other than transport (IN36), Basic Metals and Alloys (IN33). Food showed more of concentration, implying labor productivity influence did not bring about employment dispersal in this Consumer Non-Durable Industry.

Low influences of Labor Productivity on employment dispersal are in Transport (IN37), Leather (IN29), Textile Products (IN26) implied dispersal was independent of Labor productivity influence.

7.3: Impact Analysis of Relevant Explanatory Variables on Regional Dispersal Measures for the period 1976-85

This Section deals with regression results showing response of various explanatory variables when regressed on dispersal measures for Indian Industries.

Specification: HH nva= a +b(TFP-S); CV nva =a +b(TFP-S)

Ind. Name	IN Code	Dispersal Measures		HHNVA	HHNVA	HHNVA	CVNVA	CVNVA	CVNVA
		CVNVA	HHNVA	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food	21	1.440	0.099	22	1.894	32.112	41	1.803	41.677
Bev'rage	22	2.194	0.167	32	1.362	12.706	31	1.354	57.291
Textiles	25	2.046	0.149	34	1.1	2.553	22	1.024	15.888
Tex Prd	26	2.03	0.839	38	0.83	5.467	33	0.58	3.031
Wood	27	1.705	0.101	33	0.78	0.927	37	0.393	0.398
Paper	28	1.619	0.117	29	0.708	7.265	38	0.146	0.344
Leather	29	3.454	0.258	28	0.479	0.578	26	0.107	0.012
Chemical	30	2.537	0.196	31	0.417	2.319	34	0.074	0.041
R-P-C	31	2.598	0.243	27	0.296	3.983	28	0.067	0.080
Nm MPrd	32	1.422	0.987	41	0.149	0.396	30	0.063	0.008
BM&A	33	1.947	0.138	21	0.115	0.348	21	0.049	0.009
MetPrd	34	2.696	0.226	36	0.112	0.111	25	0.047	0.004
MotTr	36	1.793	0.097	26	0.107	0.012	29	0.024	0.008
Tr.Eq.	37	2.246	0.166	25	0.103	0.096	27	0.019	0.003
OMI	38	2.117	0.211	30	0.049	0.009	32	0.018	0.001
EGS	41	2.179	0.161	37	0.04	0.005	36	0.014	0.001

In Beverage (IN22) TFP influence is higher in this period than in the previous decade. Rubber-Petroleum-Coal (IN31), Basic Metals and Alloys (IN33) also reveal higher TFP influence on NVA dispersal. NVA Dispersal occurs through high TFPG influence

Machinery other than Transport (IN36), Food (IN21), Chemicals (30), Textiles (IN25), show lower TFP on NVA dispersal. (b/r) was low in and IN21 and IN36 implying low TFPG was a factor for relative concentration in these two.

Table: 7.4.b

Regional Dispersal(CV)of Industries' employment in response to TFP by Solow (at current prices) 1976-1985

Specification: CV emp =a +b(TFP-S) and HH emp = a+ b(TFP-S)

		Dispersal Measures		CV emp	CV emp	CV emp	HH emp	HH emp	HH emp
Ind. Name	IN Code	CV Emp	HH Emp	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food Pro	21	1.440	0.098	36	2.158	12.191	22	1.11	10.904
Beverag	22	3.643	0.369	30	2.102	24.799	30	0.687	0.955
Textiles	25	1.841	0.131	26	1.73	4.988	31	0.65	0.901
TextPrd	26	1.891	0.131	21	1.598	24.320	26	0.61	2.001
Wood	27	1.55	0.111	31	1.439	98.606	36	0.494	0.311
Paper	28	1.38	0.094	28	0.965	9.220	33	0.479	1.793
Leather	29	3.276	0.242	33	0.876	1.358	41	0.454	4.793
Chemic	30	1.931	0.134	25	0.677	0.559	29	0.336	0.221
R-P-C	31	1.936	0.14	27	0.627	3.419	34	0.247	0.587
Nm MPrd	32	1.232	0.0836	29	0.336	0.221	28	0.221	0.215
BM&A	33	1.714	0.1182	37	0.384	0.400	32	0.203	0.468
MetPrd	34	1.329	0.131	41	0.12	1.029	25	0.067	0.007
MotTr	36	1.57	0.074	22	0.102	0.236	27	0.06	0.045
Tr.Eq.	37	1.9	0.135	34	0.032	0.025	21	0.057	0.155
OMI	38	1.887	123	38	0.021	0.037	38	0.049	0.023
EGS	41	2.278	0.185	32	0.02	0.002	**37**	0.043	0.005

Machinery other than Transport (IN36), Chemicals (IN30), Textile Products (IN26), Rubber-Petroleum-Coal (IN31) show higher TFP influence on dispersal of employment. Textile Products (26), Chemicals (IN30), Rubber-Petroleum-Coal (IN31) and Machinery other than Transport (IN36) with high b/r did not bring about high employment dispersal in this period of 1976-85.

Transport Equipment (IN37), Other manufacturing Industries (IN38), Electricity, Gas and Steam (IN41), Leather (IN29), Wood (IN27), Textiles (IN25), Metal Products (IN34) show lower influence of TFP on employment dispersal. Textiles (IN25), Leather (IN29) and Electricity, Gas and Steam (IN41) dispersal occurred despite low TFP influence. Wood (IN27), Metal Products (IN34), Transport (IN37), Other Manufacturing Industries (IN38) showed low b /r means concentration was due to low TFP influence.

Table: 7.4.c

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Regional Dispersal(CV) of Industries' output(NVA) in response to Capital intensity (at current prices)1976-1985

Specification: CV nva = a +b(K/L); HH nva = a +b(K/L)

	Dispersal Measures			CV nva	CV nva	CV nva	HH nva	HH nva	HH nva
Ind.Nam	IN Code	HHNVA	CVNVA	IN Code	$\hat{\beta}$	$(b/r)^2$	IN Code	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food	21	0.099	1.440	31	1.093	3.588	34	0.566	2.786
Bev'	22	0.167	2.194	29	0.961	6.282	21	0.404	0.581
Textiles	25	0.149	2.046	28	0.912	1.840	31	0.34	0.366
Tex Prd	26	1.839	2.03	26	0.787	5.682	28	0.076	0.009
Wood	27	0.101	1.705	27	0.751	3.398	33	0.068	0.008
Paper	28	0.117	1.619	33	0.67	0.777	37	0.061	0.005
Leather	29	0.258	3.454	41	0.649	1.337	38	0.059	0.007
Chemical	30	0.196	2.537	37	0.62	0.519	27	0.059	0.009
R-P-C	31	0.243	2.598	38	0.565	1.017	22	0.056	0.016
Nm MPrd	32	0.980	1.422	22	0.444	1.493	41	0.046	0.004
BM&A	33	0.138	1.947	34	0.423	0.503	26	0.044	0.012
Met. Prd	34	0.226	2.696	21	0.415	0.596	32	0.038	0.007
MotTr	36	0.097	1.793	25	0.411	1.482	29	0.035	0.007
Tr.Eq.	37	0.166	2.246	36	0.045	0.081	36	0.031	0.009
OMI	38	0.211	2.117	30	0.028	0.011	25	0.023	0.003
EGS	41	0.161	2.179	32	0.022	0.004	30	0.02	0.001

Higher influences of K/L on NVA are in Rubber-Petroleum-Coal (IN31), Food Products (IN21), Metal Products (IN34), Paper (IN28), Basic Metals and Alloys (IN33), Wood (IN27). Paper, Food and Textile Products did not show high b/r and so low dispersal in them is due to low K/L. In Rubber, Chemicals and Basic Metals, that are traditional highly capital intensive did show higher dispersal in this period of 1976-85 but it was again not due to influence of K/L.

Least influences of Capital Intensity on dispersal of NVA are in Textiles (IN25), Chemicals (IN30), Non-Metallic Mineral Products (IN32), Machinery other than transport (IN36), Electricity, Gas and Steam (IN41). In Non-Metallic Mineral Products (IN32), Textiles (IN25), Machinery other than transport (IN36), $(b/r)^2$ was low in this decade implying K/L's influence though low on dispersal of NVA, concentration in these industries in this period could be either due to low K/L or independent of it.

Table: 7.4.d.
Regional Dispersal of Industries' employment in response to capital intensity (at current prices) 1976-85
Specification: CVemp = a+b(K/L); HH emp = a+ b(K/L)

		Dispersal Measures		CV emp	**CV emp**	**CV emp**	**HH emp**	**HH emp**	**HH emp**
Ind.Nam	IN Code	CV Emp	HH Emp	Industry	$\hat{\beta}$	(b /r)2	Industry	$\hat{\beta}$	(b /r)2
1	2	3	4	5	6	7	8	9	10
Food	21	1.440	0.098	25	3.183	88.100	41	0.533	1.743
Bev'	22	3.643	0.369	29	1.481	6.667	21	0.362	0.528
Textiles	25	1.841	0.131	26	0.934	2.254	29	0.332	0.302
Tex Prd	26	1.891	0.131	41	0.587	1.914	33	0.323	1.373
Wood	27	1.55	0.111	36	0.517	0.849	27	0.273	0.731
Paper	28	1.38	0.094	33	0.462	1.503	22	0.256	0.851
Leather	29	3.276	0.242	21	0.376	0.568	32	0.154	0.659
Chemical	30	1.931	0.134	38	0.356	1.093	25	0.133	0.182
R-P-C	31	1.936	0.14	37	0.354	0.103	34	0.125	1.563
Nm MPrd	32	1.232	0.084	27	0.275	0.741	26	0.059	0.009
BM&A	33	1.714	0.118	32	0.17	0.826	30	0.047	0.197
Met. Prd	34	1.329	0.131	34	0.168	1.568	31	0.041	0.563
MotTr	36	1.57	0.074	22	0.161	0.785	36	0.028	0.006
Tr.Eq.	37	1.9	0.135	31	0.066	0.545	28	0.026	0.002
OMI	38	1.887	0.123	28	0.039	0.005	37	0.022	0.029
EGS	41	2.278	0.185	30	0.036	0.015	38	0.022	0.001

The industries that show higher influences of Capital Intensity (K/L) on dispersal of employment are Textiles (IN25), Leather (IN29), Food Products (IN21), Basic Metals and Alloys (IN33), Electricity, Gas and Steam (IN41).

The Least influences of K/L on employment dispersal are in Chemicals (IN30), Paper (IN28), Rubber, Petroleum and Coal (IN31), Beverages (IN22), Metal Products (IN34), Non-Metallic Mineral Products (IN32). With high b /r dispersal in Paper and Concentration in the rest is achieved through influence of K/L on employment dispersal.

Table: 7.4.e.

Regional Dispersal of Industries NVA in response to Capital Productivity (at current prices) 1976-1985 Specification: HH nva= a+ b(K-productivity); CV nva = a+ b(K-productivity)

Ind.Nam	IN Code	Dispersal Measures		HH nva	HH nva	HH nva	CV nva	CV nva	CV nva
		HHNVA	CVNVA	Industry	$\hat{\beta}$	(b /r)2	Industry	$\hat{\beta}$	(b /r)2
1	2	3	4	5	6	7	8	9	10
Food	21	0.099	1.440	21	0.209	0.2275	38	1.345	8.614
Bev'	22	0.167	2.194	38	0.174	0.1346	29	1.332	10.366
Textiles	25	0.149	2.046	26	0.087	0.0400	26	0.889	4.676
Tex Prd	26	1.839	2.03	30	0.072	0.4320	31	0.528	8.200
Wood	27	0.101	1.705	27	0.066	0.3351	22	0.369	2.196
Paper	28	0.117	1.619	31	0.062	0.0353	28	0.331	0.234
Leather	29	0.258	3.454	29	0.051	0.0406	33	0.327	0.226
Chemical	30	0.196	2.537	33	0.029	0.0035	41	0.305	0.660
R-P-C	31	0.243	2.598	25	0.023	0.0240	21	0.191	0.529
Nm MPrd	32	0.98	3.422	28	0.022	0.0011	34	0.187	0.312
BM&A	33	0.138	1.947	22	0.02	0.0253	25	0.142	0.458
Met. Prd	34	0.226	2.696	34	0.016	0.0012	30	0.083	0.007
MotTr	36	0.097	1.793	36	0.016	0.0122	37	0.078	0.358
Tr.Eq.	37	0.166	2.246	37	0.013	0.0154	36	0.058	0.030
OMI	38	0.211	2.117	32	0.011	0.0004	27	0.025	0.007
EGS	41	0.161	2.179	41	0.011	0.0009	32	0.011	0.001

Industries that showed relatively higher influence of Capital Productivity on NVA dispersal in this period were Other Manufacturing Industries (IN38), Textile Products (IN26), Rubber, Petroleum and Coal (IN31), Basic Metals and Alloys (IN33). But b/r are uniformly low in HH in all industries and despite higher influence of Capital productivity, this was not a factor for dispersal/concentration

Basic Metals and Textile Products being more labor intensive, despite high capital productivity's higher influence on NVA dispersal, did not really show much dispersal. Rubber-Petroleum-Coal and Other Manufacturing Industries, being capital intensive, showed greater dispersal, both in CV and HH measures, due to higher capital productivity's influence on dispersal.

Least influences is in Electricity, Gas and Steam (IN41), Non-Metallic Mineral Products (IN32), Wood (IN27), Metal Products (IN34), Transport (IN37), Machinery other than transport (IN36). Concentration was due to low b/r in these industries as mot of them are capital intensive.

Table: 7.4.f

Regional Dispersal(CV)of Industries' employment in response to Capital productivity (at current prices) 1976-85
Specification:CV emp = a +b(K-productivity);
H H hemp= a +b(K-productivity)

	Measures of Industrial Dispersal			CV emp	CV emp	CV emp	HH emp	HH emp	HH emp
Ind.Name	IN Code	CV emp	HH emp	Industry	$\hat{\beta}$	(b /r)2	Industry	$\hat{\beta}$	(b /r)2
1	2	3	4	5	6	7	8	9	10
Food Pro	21	1.440	0.098	21	1.228	10.258	21	1.15	9.583
Beverages	22	3.643	0.369	41	0.725	2.628	41	0.71	2.447
Textiles	25	1.841	0.131	29	0.669	1.279	28	0.439	1.606
Textile Prd	26	1.891	0.131	36	0.559	0.542	31	0.336	5.376
Wood	27	1.55	0.111	28	0.456	1.733	27	0.244	0.783
Paper	28	1.38	0.094	37	0.438	0.909	32	0.157	0.536
Leather	29	3.276	0.242	38	0.386	0.680	33	0.147	0.831
Chemical	30	1.931	0.134	25	0.289	1.705	34	0.096	1.536
Ru-Pet-Co	31	1.936	0.14	27	0.248	0.799	25	0.057	0.009
Nm MPrd	32	1.232	0.084	32	0.171	0.665	22	0.055	1.008
BM&A	33	1.714	0.118	34	0.135	1.161	36	0.051	0.163
Metal Prd	34	1.329	0.131	33	0.12	0.465	30	0.039	0.138
MotTr	36	1.57	0.074	22	0.073	0.666	37	0.028	0.004
Tr.Eq.	37	1.9	0.135	26	0.061	0.034	38	0.023	0.002
OMI	38	1.887	0.123	30	0.043	0.132	29	0.022	0.002
EGS	41	2.278	0.185	31	0.05	2.500	26	0.012	0.004

Food (IN21), Electricity, Gas and Steam (IN41), Paper (IN28) show higher influences of Capital productivity on employment but concentration in them is despite high b/r, showing higher capital productivity influence is not bringing about dispersal.

Low influence of Capital Productivity on dispersal of employment were in industries like Chemicals (IN30), Textile Products (IN26), Beverages (IN22), Basic Metal and Alloys (IN33), Metal Products (IN34), Non-Metallic Mineral Products (IN32). While Chemicals and Metal Products showed relatively high $(b/r)^2$ implying despite high influence, dispersal was not brought about.

Table:7.4.g
Regional Dispersal(CV) of Industries' output(NVA) in response to Labor productivity: (at current prices) 1976-85

Specification: CV nva = a +b(L-productivity); HH nva = a +b(L-productivity)

	Measures of Industrial Dispersal			CV nva	CV nva	CV nva	HH nva	HH nva	HH nva
Ind.Nam	IN Code	HHNVA	CVNVA	IN Code	$\hat{\beta}$	(b /r)2	IN Code	$\hat{\beta}$	(b /r)2
1	2	3	4	5	6	7	8	9	10
Food Pro	21	0.099	1.440	29	1.734	30.681	30	1.819	15.108
Beverag	22	0.167	2.194	37	0.784	0.670	37	1.353	2.134
Textiles	25	0.149	2.046	22	0.687	7.866	41	0.13	0.128
Tex Prd	26	1.839	2.03	33	0.668	0.596	31	0.108	0.084
Wood	27	0.101	1.705	38	0.607	1.746	25	0.074	0.249
Paper	28	0.117	1.619	27	0.551	4.048	38	0.071	0.024
Leather	29	0.258	3.454	32	0.519	1.522	33	0.068	0.012
Chemical	30	0.196	2.537	25	0.315	6.202	28	0.061	0.032
Ru-Pet-C	31	0.243	2.598	31	0.312	0.854	26	0.06	0.007
Nm MPrd	32	0.9797	1.422	41	0.305	0.388	22	0.059	0.048
BM&A	33	0.138	1.947	28	0.225	0.405	32	0.031	0.009
Met.Prd	34	0.226	2.696	36	0.222	0.189	29	0.026	0.008
MotTr	36	0.097	1.793	34	0.148	0.070	27	0.026	0.007
Tr.Eq.	37	0.166	2.246	30	0.122	0.103	21	0.026	0.011
OMI	38	0.211	2.117	26	0.065	0.007	34	0.013	0.001
EGS	41	0.161	2.179	21	0.05	0.078	36	0.012	0.001

The higher influence of Labor productivity on NVA dispersal are in Transport (IN37), Electricity (IN41), Rubber-Petroleum and Coal (IN31), Textiles (IN25), Chemicals (IN30). $(b/r)^2$ is not so high in all and so relatively less dispersal than in previous decades is due to low influence of labor productivity

The Least influences are in Food (IN21), Machinery other than Transport (IN36), Metal Products (IN34). $(b/r)^2$ being low, concentration is due to low influence of labor productivity.

Table: 7.4.h.

Regional Dispersal(HH&CV) of Industries' employment in response to Labor productivity (at current prices) 1976-85

Specification: HH emp = a +b(L-productivity); CV emp= a +b(L-productivity)

	Measures of Industrial Dispersal			HH emp	HH emp	HH emp	CV emp	CV emp	CV emp
Ind.Name	IN Code	CV emp	HH emp	IN Code	$\hat{\beta}$	$(b/r)^2$	IN Code	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food Pro	21	1.440	0.098	30	1.079	2.854	29	1.724	8.099
Beverages	22	3.643	0.369	29	0.448	0.629	31	1.538	5.884
Textiles	25	1.841	0.131	21	0.180	0.771	41	1.200	4.299
Textile Prd	26	1.891	0.131	31	0.092	0.073	30	1.054	2.750
Wood	27	1.55	0.111	41	0.084	0.021	26	0.899	1.858
Paper	28	1.38	0.094	36	0.082	0.009	28	0.790	1.950
Leather	29	3.276	0.242	22	0.073	0.063	36	0.726	1.722
Chemical	30	1.931	0.134	26	0.058	0.009	33	0.699	1.613
Ru-Pet-Co	31	1.936	0.14	28	0.055	0.009	32	0.446	0.448
Nm MPrd	32	1.232	0.084	33	0.048	0.002	27	0.433	0.677
BM&A	33	1.714	0.118	27	0.029	0.002	38	0.347	0.380
Metal Prd	34	1.329	0.131	34	0.020	0.002	37	0.311	0.446
MotTr	36	1.57	0.074	32	0.017	0.001	34	0.224	0.252
Tr.Eq.	37	1.9	0.135	25	0.013	0.172	21	0.190	0.820
OMI	38	1.887	0.123	38	0.013	0.001	25	0.016	0.262
EGS	41	2.278	0.185	37	0.010	0.011	22	0.013	0.001

High influences of labor productivity on employment dispersal are in Chemicals (IN30), Leather (IN29), Rubber, Petroleum and Coal (IN31), Electricity, Gas and Steam (IN41). While $(b/r)^2$ is higher in these industries, less dispersal in this decade noticed in these cases too meant that higher influence of labor productivity could not help in greater dispersal.

Least influences are in Transport (IN37), Other Manufacturing Industries (IN38), Wood (IN27), Non-Metallic Mineral Products (IN32), Basic Metals and Alloys (IN33) and with low $(b/r)^2$, lower concentration could be due to low influence of labor productivity.

7.5 Impact Analysis of Relevant Explanatory Variables on Regional Dispersal Measures for the period 1986-95

This Section deals with Regression results of HH and CV Measures of NVA and Employment of each of the 2-digit Industries for the period 1986-95 along with the Regional dispersal measures cited in the columns (3) and (4) to make an effective influence assessment through recourse to Grassacks instrument of $(b/r)^2$.

Table: 7.5.a Regional Dispersal of Industries' Output (NVA) in Response to TFP by Solow (at current prices) for 1986-95
Specification: HH nva= a+b (TFP-S); CV nva= a+b (TFP-S)

Ind. Name	Measures of Industrial Dispersal			HHNva	HHNva	HHNva	Cvnva	Cvnva	CVNva
	IN Code	Cvnva	HHNva	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food Pro	21	1.456	0.100	22	2.034	12.313	22	1.505	8.917
Beverage	22	1.866	0.132	41	1.21	5.567	31	1.386	2.366
Textiles	25	1.756	0.122	29	1.162	1.857	41	1.217	5.445
TextPrd	26	2.276	0.167	33	1.08	25.920	34	0.316	3.698
Wood	27	1.724	0.125	32	0.988	1.198	21	0.22	0.949
Paper	28	1.526	0.011	21	0.824	1.801	37	0.179	0.091
Leather	29	3.408	0.27	31	0.771	1.607	32	0.11	0.015
Chemical	30	2.263	0.178	30	0.569	11.991	30	0.077	0.156
Ru-Pe-Co	31	1.986	0.145	34	0.435	1.931	29	0.066	0.029
Nm MPrd	32	1.456	0.101	27	0.271	0.350	25	0.043	0.023
BM&A	33	1.984	0.143	37	0.229	0.177	27	0.031	0.004
Metal Prd	34	2.279	0.179	38	0.102	0.128	38	0.027	0.008
MotTr	36	1.81	0.13	36	0.098	0.267	33	0.02	0.003
Tr.Eq.	37	2.27	0.163	28	0.094	0.044	26	0.015	0.005
OMI	38	1.967	0.153	25	0.015	0.017	36	0.011	0.003
EGS	41	2.437	0.173	26	0.011	0.011	28	0.011	0.001

Higher Influence of TFP on NVA Dispersal is in Beverages (IN22), Electricity, Gas and Steam (IN41), RPC (IN31), Food (IN21) and Non-Metallic Mineral Products (IN32) and also Chemicals (IN30). While Beverages, Electricity, Chemicals. RPC, show higher dispersal in HH, Food and NmMP show relatively lesser dispersal than others of this group showing high TFP influence. However, $(b/r)^2$ is higher in Electricity, NmMP, Food, RPC and Chemicals, showing dispersal was influenced by TFPG in these Intermediates, Consumer Non Durable like Food, Capilta iNtensive Intermediates like NmMp, Chemicals and RPC and Kgood Indsutry like EGS (IN41).

Thus by the 1980s, Chemicals showed that sunrise industry status has become to get dispersed thereby helping cause of regional and industrial equity in Indian economy. Intermediates have also done well in 1980s and its response to TFPG encourages greater planning for this group of Industries to act as leading industries for grwoth and dispersal.

Food Dispersal shown as getting effected by TFPG can encourage technological, technical innovation in seeds, irrigation, fertilizer and extension programmes to tap this industry's potential to eradicate poverty and rasie surplus for industrialization.

Table: 7.5.b.

Regional Dispersal(CV)of Industries' employment in response to TFP by Solow (at current prices) 1986-95 Specification: CV emp = a +b(TFP-S), HH emp = a+b(TFP-S)

Ind. Name	IN code	Dispersal measures		CV emp	CV emp	CV emp	HH emp	HH emp	HH emp
		CV Emp	HH Emp	Ind. C	$\hat{\beta}$	$(b/r)^2$	Ind.C	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food Pro	21	1.401	0.096	36	2.632	13.530	29	1.142	5.695
Beverag	22	3.748	0.355	32	1.838	3.617	32	0.51	0.798
Textiles	25	1.609	0.1	21	1.837	6.428	22	0.45	8.409
Text Prd	26	2.043	0.145	34	1.294	3.390	30	0.399	0.910
Wood	27	1.371	0.093	29	1.242	0.433	36	0.392	0.309
Paper	28	1.259	0.085	33	0.954	4.027	21	0.314	0.405
Leather	29	3.633	0.2989	27	0.779	2.380	34	0.31	0.169
Chemical	30	1.862	0.1332	26	0.752	3.448	41	0.191	0.304
R-P-C	31	1.315	0.088	25	0.677	1.614	38	0.178	0.062
Nm MPrd	32	1.867	0.081	41	0.442	2.147	25	0.067	0.015
BM&A	33	1.56	0.106	30	0.41	1.303	33	0.063	0.018
Met Prd	34	1.602	0.11	37	0.372	0.623	27	0.062	0.022
MotTr	36	1.489	0.101	28	0.097	0.076	26	0.058	0.120
Tr.Eq.	37	1.605	0.109	22	0.072	0.216	37	0.033	0.161
OMI	38	1.48	0.104	38	0.053	0.005	28	0.028	0.007
EGS	41	2.347	0.156	31	0.033	0.024	31	0.015	0.001

Food (IN21), Leather (IN29), Non-metallic Mineral Products (IN32), Machinery other than Transport (IN33) show higher influence of TFP on employment dispersal in 1986-95. In Basic Metals and Alloys (IN33), and Leather (IN29), concentration or less dispersal shows TFP influence. But Food still shows concentration, despite TFPG influence being high.

Rubber-Petroleum-Coal (IN31), Paper (IN28), Other Manufacturing Industries (IN38), Transport Equipment (IN37), Textile Products (IN26) showed less influence of TFP on employment dispersal. B/r is higher in IN26, IN37, dispersal/concentration in IN37 was due to TFP influence. Transport had entered a consolidation phase. In Other Manufacturing Industries (IN38) b/r is low and concentration is noticed. In Paper (IN28) and Rubber-Petroleum-Coal (IN31) concentration is seen with low $(b/r)^2$.

Table: 7.5.c Regional Dispersal of Industries Output (NVA) in Response to Capital Intensity (at Current Year Prices) for 1986-95
Specification: CV nva = a+ b(K/L); HH nva = a+ b(K/L)

		Dispersal Measures		CVnva	CV nva	CV nva	HH nva	HH nva	HH nva
Ind.Name	IN Code	HHNVA	CVNVA	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food	21	0.100	1.456	32	1.815	3.365	38	1.244	1.570
Bev'	22	0.132	1.866	38	1.244	3.286	32	1.124	1.266
Textiles	25	0.122	1.756	31	1.001	1.117	29	0.764	3.207
Tex Prd	26	0.167	2.276	27	0.546	1.017	31	0.097	0.011
Wood	27	0.125	1.724	30	0.489	2.061	22	0.091	0.025
Paper	28	0.011	1.526	41	0.423	0.394	21	0.077	0.006
Leather	29	0.27	3.408	26	0.215	0.105	27	0.073	0.018
Chemical	30	0.178	2.263	37	0.212	0.091	36	0.06	0.006
R-P-C	31	0.145	1.986	28	0.141	0.092	33	0.054	0.014
Nm MPrd	32	0.101	1.456	22	0.11	0.036	41	0.038	0.003
BM&A	33	0.143	1.984	36	0.057	0.006	34	0.034	0.002
Met. Prd	34	0.179	2.28	33	0.05	0.008	28	0.022	0.003
MotTr	36	0.13	1.81	29	0.031	0.004	37	0.015	0.000
Tr.Eq.	37	0.163	2.27	34	0.029	0.001	*30*	0.012	0.001
OMI	38	0.153	1.967	21	0.025	0.003	*26*	0.012	0.003
EGS	41	0.173	2.437	25	0.024	0.001	25	0.011	0.002

The maximum influence of Capital Intensity on dispersal of Net Value Added (NVA) is seen in Non-metallic mineral products (IN32), Other Manufacturing Industries (IN38), Rubber-Petroleum and Coal (IN31) in both CV and HH measures. Dispersal is consistently higher in these three industries. $(b/r)^2$ is high in the these three industries, especially in the CV case. $(b/r)^2$ being consistently high in both HH and CV cases,. RPC, OMI and NmMP, all being capital intensive, show influence of K/L to bring about dispersal.

The lowest effect of K/L is seen in Textiles (IN25), with industries nearer this being Paper (IN28), Other Manufacturing Industries (IN38), Machinery other than Transport (36), Basic Metals and Alloys (IN33), Metal Products (IN34), both in CV and HH regressions. This was the nature of dispersal in this decade, as far as these industries were concerned. Excepting

HH (IN28), other dispersal measures show higher relative dispersal. $(b/r)^2$, except in Other Manufacturing Industries (IN38). Dispersal in Basic Metals and Alloys (IN33) and Paper (IN28) low $(b/r)^2$, these more concentrated did not see much influence of K/L. Thus lack of dispersal in these two industries in the fourth decade of planned industrialization may be a pointer to recession in these two consumer-oriented industries, largely due to lack of planning for dispersal and inadequacy of regional market surveys for Paper Demand. Lack of Input-Output Planning in Basic Metals Industry, which is an Intermediate Industry also can be a cause for lack of dispersal.

Table:7.5.d.

Regional Dispersal(CV of Industries' employment in response to Capital intensity (at current prices) 1986-95

Specification: CV emp = a +b(K/L); HH emp= a +b(K/L)

		Dispersal Measures		CV emp	CV emp	CV emp	HH emp	HH emp	HH emp
Ind.Nam	IN code	CV Emp	HH Emp	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food	21	1.401	0.096	22	2.22	12.445	21	1.72	4.964
Bev'	22	3.748	0.355	25	2.038	26.122	41	0.135	2.025
Textiles	25	1.609	0.1	34	0.842	4.604	30	0.058	0.012
Tex Prd	26	2.043	0.145	21	0.747	2.082	31	0.051	0.004
Wood	27	1.371	0.093	29	0.625	1.170	34	0.047	0.019
Paper	28	1.259	0.085	26	0.384	0.170	22	0.045	0.010
Leather	29	3.633	0.2989	31	0.331	0.184	33	0.041	0.019
Chemical	30	1.862	0.1332	32	0.327	0.279	38	0.034	0.002
R-P-C	31	1.315	0.088	27	0.069	0.022	36	0.033	0.020
Nm MPrd	32	1.867	0.081	41	0.046	0.014	25	0.027	0.001
BM&A	33	1.56	0.106	30	0.055	0.011	32	0.023	0.014
Met. Prd	34	1.602	0.11	33	0.052	0.027	27	0.02	0.002
MotTr	36	1.489	0.101	37	0.039	0.002	26	0.014	0.002
Tr.Eq.	37	1.605	0.109	38	0.019	0.001	28	0.014	0.001
OMI	38	1.48	0.104	28	0.012	0.001	37	0.015	0.019
EGS	41	2.347	0.156	36	0.011	0.037	29	0.011	0.002

Industries showing Higher K/L influence on employment are in Food Products (IN21), Beverages (IN22), Non-Metallic Mineral Products (IN32), Wood (IN27), Textile Products (IN26). In Wood and Textile Products, b /r is low implying that dispersal in Textile Products and concentration in Wood is due to lack of K/L influence. In Beverages $(b/r)^2$ is high in CV measure and is cause for dispersal. In Food, $(b/r)^2$ are high, but there is still concentration. In non-metallic mineral products industry and Textiles though influence of K/L was high on employment dispersal, it came about K/L influence.

Table: 7.5.e. Regional Dispersal (HH& CV) of industries' output (NVA) in response to Capital Productivity (at current prices) 1986-1995.

Specifications: HH nva = a+ b (K-productivity): CV nva = a + b(K-Productivity)

I.N.	IN Code	dispersal measures		HH nva	HH nva	HH nva	CV nva	CV nva	CV nva
		HHNVA	CVNVA	Industry		$(b/r)^2$	Industry		$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food	21	0.100	1.456	41	0.305	0.142	29	1.468	4.685
Bev'	22	0.132	1.866	26	0.295	0.592	41	1.446	3.035
Textiles	25	0.122	1.756	38	0.201	0.111	38	0.883	2.057
Tex Prd	26	0.167	2.276	29	0.159	0.086	30	0.699	5.959
Wood	27	0.125	1.724	33	0.125	0.018	34	0.627	1.136
Paper	28	0.011	1.526	30	0.12	0.060	32	0.387	0.282
Leather	29	0.27	3.4078	27	0.094	0.028	25	0.281	0.244
Chem	30	0.178	2.263	34	0.079	0.017	26	0.275	1.454
R-P-C	31	0.145	1.986	37	0.071	0.504	21	0.146	0.140
Nm MP	32	0.101	1.456	31	0.064	0.011	36	0.118	0.121
BM&A	33	0.143	1.984	28	0.054	0.023	33	0.095	0.009
M. Prd	34	0.179	2.279	22	0.053	0.007	28	0.093	0.069
MotTr	36	0.13	1.81	25	0.026	0.002	27	0.088	0.041
Tr.Eq.	37	0.163	2.27	32	0.023	0.001	31	0.063	0.009
OMI	38	0.153	1.967	21	0.022	0.003	22	0.051	0.039
EGS	41	0.173	2.437	36	0.011	0.008	37	0.04	0.015

Industries showing higher influence of capital productivity on NVA dispersal are Electricity, Gas and Steam (IN41), Other Manufacturing Industries (IN38), Leather (IN29), Chemicals (IN30), show higher K productivity influence and is cause for dispersal. It is encouraging that Leather Industry, labor intensive industry, also showed capital productivity's influence on dispersal of output in the fourth decade of industrialization and during the time when liberalization was manifesting. In Leather also, dispersal finds cause in capital productivity influence.

Least influences of capital productivity are in Machinery other than transport (IN36), Rubber, Petroleum and Coal (IN31), Beverages (IN22), Paper (IN28). Petroleum and Machinery other than transport being capital intensive showed dispersal, though less due to influence of capital productivity. But the overall liberalizing climate had an influence in bringing about dispersal in these two capital goods industries. Paper and Beverages, being labor intensive showed more concentration and less dispersal than the two capital-intensive industries.

Table: 7.4.f.

Regional Dispersal(CV)of Industries' employment in response to Capital productivity (at current prices) 1986-95
Specification CV emp = a + b(K-productivity); HH emp = a +b(K-productivity)

	Measures of Industrial Dispersal			CV emp	CV emp	CV emp	HH emp	HH emp	HH emp
Ind.Name	IN Code	CV emp	HH emp	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food Pro	21	1.401	0.096	37	4.033	24.794	29	0.731	1.558
Beverages	22	3.748	0.355	29	0.802	1.360	38	0.653	1.929
Textiles	25	1.609	0.1	41	0.775	1.347	41	0.53	0.424
Textile Prd	26	2.043	0.145	22	0.649	0.462	36	0.494	0.444
Wood	27	1.371	0.093	28	0.563	0.809	30	0.349	0.206
Paper	28	1.259	0.085	26	0.559	0.659	37	0.184	0.086
Leather	29	3.633	0.299	36	0.39	0.869	31	0.076	0.057
Chemical	30	1.862	0.133	25	0.125	0.028	26	0.075	0.009
Ru-Pet-Co	31	1.315	0.088	34	0.086	0.062	25	0.057	0.032
Nm MPrd	32	1.867	0.081	32	0.076	0.152	28	0.047	0.007
BM&A	33	1.56	0.106	33	0.074	0.022	21	0.032	0.007
Metal Prd	34	1.602	0.11	30	0.033	0.002	22	0.024	0.013
MotTr	36	1.489	0.101	21	0.024	0.001	27	0.022	0.002
Tr.Eq.	37	1.605	0.109	27	0.021	0.002	33	0.09	0.050
OMI	38	1.48	0.104	38	0.017	0.002	34	0.07	0.258
EGS	41	2.347	0.156	31	0.012	0.001	32	0.059	0.134

High influence of capital productivity on employment dispersal seen in Transport (IN37), Electricity, Gas and Steam (IN41), and Leather (IN29). $(b/r)^2$ being high, dispersal is brought about by the influence of capital productivity.

Low influences of capital productivity on employment dispersal were in Food (IN21), Textiles (IN25), Metal Products (IN34), Non-Metallic Mineral Products (IN32), Basic Metals and Alloys (IN33), Wood (IN27). In IN32, IN33and IN34, the Intermediate Goods Industries, moderate dispersal is despite lack of influence of capital productivity. Food, Textiles and Wood show concentration and with little influence of capital productivity.

Table: 7.5.g.

Regional Dispersal(CV and HH) of Industries' output(NVA) in response to Labor productivity (at current prices) 1986-95

Specification: CV nva = a +b(L-productivity); HH nva = a +b(L-productivity)

Measures of Industrial Dispersal				CV nva	CV nva	CV nva	HH nva	HH nva	HH nva
Ind.Nam	IN Code	HHNVA	CVNVA	IN Code	$\hat{\beta}$	$(b/r)^2$	IN Code	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food Pro	21	0.100	1.456	36	1.394	1.999	41	0.301	0.115
Beverag	22	0.132	1.866	29	1.251	20.867	28	0.248	0.293
Textiles	25	0.122	1.756	26	0.741	0.877	31	0.095	0.017
Text Prd	26	0.167	2.276	30	0.646	12.274	34	0.092	0.032
Wood	27	0.125	1.724	41	0.447	0.298	27	0.084	0.034
Paper	28	0.011	1.526	33	0.396	0.504	37	0.07	0.017
Leather	29	0.27	3.4078	38	0.208	0.084	33	0.063	0.005
Chemical	30	0.178	2.263	21	0.118	0.114	36	0.059	0.066
Ru-Pet-C	31	0.145	1.986	31	0.092	0.021	30	0.056	0.016
Nm MPrd	32	0.101	1.456	27	0.092	0.067	25	0.052	0.007
BM&A	33	0.143	1.984	37	0.074	0.027	21	0.044	0.003
Met.Prd	34	0.179	2.279	25	0.052	0.006	22	0.036	0.029
MotTr	36	0.13	1.81	32	0.044	0.004	29	0.015	0.001
Tr.Eq.	37	0.163	2.27	22	0.032	0.038	26	0.015	0.004
OMI	38	0.153	1.967	28	0.022	0.004	32	0.015	0.001
EGS	41	0.173	2.437	34	0.015	0.001	38	0.014	0.003

Higher influences of Labor productivity on NVA dispersal are in Electricity, Gas and Steam (IN41), Basic Metals and Alloys (IN33), Machinery other than Transport (IN36), Chemicals (IN30), Rubber, Petroleum and Coal (IN31), Wood (IN27). $(b/r)^2$ was been high in Rubber, Petroleum and Coal (IN31), Machinery other than Transport (IN36) and Electricity (IN41), there is more concentration, despite influence of labor productivity on dispersal process. But dispersal being higher in Chemicals, high $(b/r)^2$ shows influence of Labor Productivity on NVA dispersal in this decade. In Basic Metals, high b /r could not bring about much dispersal.

The Least influences are in Beverages (IN22), Non-Metallic Mineral Products (IN32), Textiles (IN25). While labor productivity has show less influence in these industries' dispersal, these being labor intensive industries, concentration has manifested rather than conspicuous dispersal.

Table:7.5.h. Regional Dispersal (HH&CV) of Industries' employment in response to L-productivity (at current prices) 1986-95 Specification: HH emp = a +b(L-productivity); CV emp= a +b(L-productivity)

	Measures of Industrial Dispersal			HH emp	HH emp	HH emp	CV emp	CV emp	CV emp
Ind.Name	IN Code	CV emp	HH emp	IN Code	$\hat{\beta}$	(b /r)2	IN Code	$\hat{\beta}$	(b /r)2
1	2	3	4	5	6	7	8	9	10
Food Pro	21	1.401	0.096	33	0.805	0.931	26	0.393	0.179
Beverages	22	3.748	0.355	37	0.402	1.171	22	0.304	0.889
Textiles	25	1.609	0.1	27	0.09	0.029	27	0.195	0.166
Textile Prd	26	2.043	0.145	25	0.081	0.298	41	0.172	0.035
Wood	27	1.371	0.093	41	0.062	0.116	29	0.072	0.015
Paper	28	1.259	0.085	34	0.061	0.620	28	0.072	0.008
Leather	29	3.633	0.299	38	0.028	0.002	33	0.067	0.005
Chemical	30	1.862	0.133	30	0.026	0.002	32	0.023	0.001
Ru-Pet-Co	31	1.315	0.088	22	0.021	0.003	37	0.018	0.002
Nm MPrd	32	1.867	0.081	21	0.019	0.003	25	0.017	0.003
BM&A	33	1.56	0.106	29	0.017	0.000	38	0.017	0.001
Metal Prd	34	1.602	0.11	32	0.016	0.001	36	0.016	0.002
MotTr	36	1.489	0.101	26	0.015	0.000	31	0.015	0.001
Tr.Eq.	37	1.605	0.109	31	0.013	0.000	30	0.012	0.001
OMI	38	1.48	0.104	36	0.003	0.000	21	0.012	0.002
EGS	41	2.347	0.156	28	0.001	0.000	34	0.005	0.002

In the fourth decade of industrialization, Basic Metals and Alloys (IN33), Transport (IN37), Wood (IN27), Electricity (IN41), show higher influences of labor productivity on employment dispersal. B/r being on the lower side, lower influence of labor productivity was a determining cause for lack of dispersal.

Lower influences are in Food Products (IN21), Machinery other than transport (IN36), Chemicals (IN30) Other Manufacturing Industries (IN38), Non-Metallic Mineral Products (IN32). Dispersal in hthese industries were not due to Labor productivity influence.

7.6 Impact Analysis of Relevant Explanatory Variables on Regional Dispersal Measures for the long period of 40years, 1956-95

This Section deals with Regression results of HH and CV Measures of NVA and Employment of each of the 2-digit Industries for the period 1959-95 along with the Regional dispersal measures cited in the columns (3) and (4) to make an effective influence assessment through recourse to Grassacks instrument of $(b/r)^2$ for the long term movements of dispersion in Indian Industries.

Table: 7.6.a

Regional Dispersal(HH & CV) of Industries' output(NVA) in response to TFP by Solow (at current prices) 1956-1995

Specification: HH nva = a +b(TFP-S); CV nva= a +b(TFP-S)

	Dispersal Measure		HHNva	HH Nva	HH Nva	CV nva	CV nva	CV nva
IN Code	HH nva	CV nva	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9
21	0.266	3.638	33	0.433	3.989	41	0.867	3.977
22	0.197	2.623	34	0.405	2.563	36	0.673	0.754
25	0.241	3.020	41	0.38	4.376	34	0.388	2.552
26	0.173	2.691	32	0.351	1.325	32	0.36	3.703
27	0.111	1.553	29	0.299	2.794	28	0.32	3.657
28	0.360	3.193	37	0.279	1.179	37	0.282	1.205
29	0.187	5.085	25	0.268	1.436	25	0.264	1.621
30	0.221	2.377	22	0.225	4.602	22	0.21	0.437
31	0.193	2.714	28	0.189	2.101	30	0.187	0.426
32	0.152	2.021	36	0.167	1.743	29	0.185	1.901
33	0.188	2.423	21	0.146	0.454	27	0.122	1.063
34	0.106	1.538	30	0.146	4.278	26	0.096	0.838
36	0.238	2.963	31	0.09	0.579	31	0.093	0.166
37	0.102	2.827	26	0.065	0.083	21	0.026	0.005
38	0.296	3.488	38	0.045	0.018	33	0.019	0.026
41	0.216	3.101	27	0.034	0.046	38	0.012	0.048

Metal Products (34), Transport Equipment and Parts (37), Electricity, Gas and Steam (IN41) and Basic Metals and Alloys (IN33) show higher effect of TFP on NVA. A higher $(b/r)^2$ is given by Electricity, Gas and Steam (IN 41) and dispersal of NVA in EGS is noticed to be influenced by high TFP Growth in the the long run. In Basic Metals and Alloys (IN33) and Metal Products (IN34), these being Intermediate Capital Intensive Industries, TFPG influence as a cause for dispersal is not definitive. This is a cause for concern.

The least influence of TFP on NVA of industries is seen in Other Manufacturing Industries (IN38), Wood (IN27), Food (IN21), Chemicals (IN30), Textile Products (IN26) and Rubber-Petroleum-Coal (IN31), Basic Metals and Alloys (33). High NVA dispersal and high $(b/r)^2$ in Chemicals (IN30) means that low TFPG influence as revealed in $\hat{\beta}$, itself is a factor for dispersal in this industry.

Table: 7.6.b.

Regional Dispersal(CV&HH)of Industries' employment in response to TFP by Solow
(at current prices) 1956-95 CV emp = a +b(TFP-S)
Specification:
HH emp= a+ b(TFP-S)

	Measures of Industrial Dispersal			CV emp	CV emp	CV emp	HH emp	HH emp	HH emp
In.Name	IN	HH emp	CV emp	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food	21	0.112	1.593	33	3.874	108.753	36	1.23	11.913
Bev'	22	0.414	4.684	34	3.189	77.631	30	0.539	2.665
Textiles	25	0.148	2.087	25	2.888	38.259	21	0.395	1.279
Tex Prd	26	0.162	2.265	38	1.717	268.008	33	0.383	1.063
Wood	27	0.123	1.954	21	1.306	15.793	29	0.373	1.150
Paper	28	0.129	1.809	26	1.292	3.241	25	0.346	0.973
Leather	29	0.340	4.996	29	1.098	5.219	37	0.338	1.109
Chemical	30	0.232	3.316	31	0.722	2.348	34	0.332	0.854
R-P-C	31	0.144	2.144	27	0.703	4.619	38	0.199	0.660
Nm MPrd	32	0.113	1.482	30	0.552	2.326	22	0.192	0.297
BM&A	33	0.154	2.205	36	0.48	14.400	41	0.139	1.486
Met. Prd	34	0.174	2.399	32	0.31	0.874	27	0.118	0.065
MotTr	36	0.134	1.942	22	0.187	0.324	32	0.095	0.053
Tr.Eq.	37	0.166	2.347	37	0.162	0.772	26	0.076	0.008
OMI	38	0.185	2.599	41	0.117	0.913	31	0.056	0.030
EGS	41	0.116	2.143	28	0.056	0.052	28	0.016	0.001

Basic Metals and Alloys (IN33), Metal products (IN34), Textiles (IN25), Leather (IN29) show high influence of Total factor Productivity (TFP) on dispersal of employment. With higher employment dispersal, especially by CV, higher $(b/r)^2$ implies that TFPG is a cause for employment dispersal in both Labor intensive and Capital Intensive Intermediates.

Paper (IN28), Electricity (IN41), Non-Metallic Mineral Products (IN32), Beverages (IN22) show little influence of TFP on employment dispersal. (b /r)being generally low with concentration in these industries, proves that raising TFPG will cause for dispersal in the long run.

Table: 7.6.c.

: Regional Dispersal(CV) of Industries' output(NVA) in response to Capital intensity (at current prices) 1956-95

Specification: CV nva =a +b(K/L); HH nva = a+ b(K/L)

	Dispersal Measures			CV nva	CV nva	CV nva	HH nva	HH nva	HH nva
Ind.Name	IN	CV nva	HH nva	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food	21	1.538	0.010	30	0.118	0.111	21	0.076	0.109
Bev'	22	2.714	0.193	37	0.093	0.079	29	0.065	0.092
Textiles	25	2.377	0.221	32	0.089	0.220	26	0.061	0.029
Tex Prd	26	2.827	0.102	41	0.086	1.849	32	0.059	0.139
Wood	27	3.101	0.216	21	0.07	0.092	27	0.047	0.023
Paper	28	2.021	0.152	29	0.062	0.087	33	0.043	0.058
Leather	29	3.193	0.360	28	0.049	0.021	30	0.034	0.193
Chemical	30	3.638	0.266	26	0.045	0.010	28	0.029	0.008
R-P-C	31	2.963	0.238	33	0.043	0.056	36	0.029	0.005
Nm MPrd	32	1.553	0.111	38	0.038	0.041	41	0.019	0.004
BM&A	33	2.623	0.197	22	0.037	0.009	25	0.016	0.028
Met. Prd	34	3.020	0.241	31	0.032	0.024	38	0.015	0.002
MotTr	36	2.423	0.188	27	0.018	0.007	37	0.014	0.020
Tr.Eq.	37	5.085	0.187	34	0.018	0.009	34	0.013	0.004
OMI	38	3.488	0.296	25	0.015	0.075	31	0.013	0.012
EGS	41	2.691	0.173	36	0.014	0.002	22	0.002	0.002

Higher influences of K/L on NVA dispersal in the long period was in Food (IN21), Leather (IN29), Chemicals (IN30), Non-Metallic Mineral Products (IN32), Paper (IN28), Textile Products (IN26), Basic Metals and Alloys (IN33). But less dispersal and lower $(b/r)^2$ implied that capital intensity (K/L) influence though high, has not been a factor for bringing about high dispersal of NVA in the long run in Indian Industry

Table: 7.6.d.
Influence of K/L on employment dispersal of Indian Industry. (at current prices) 1956-95 Specification HH emp = a +b(K/L) CV emp=a+b(K/L)

CV emp	CV emp	CV emp	CV emp	HHemp	HH emp	HH emp	dispersal measures		
Ind.Nm.	I.N.	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$	IN	HH emp	CV emp
1	2	3	4	5	6	7	8	9	10
Wood	27	0.529	0.400	21	0.347	0.808	21	0.112	1.593
EGC	41	0.327	0.835	29	0.266	0.201	22	0.414	4.684
Metal P	34	0.278	0.468	38	0.178	0.311	25	0.148	2.087
OMI	38	0.269	0.652	41	0.089	0.256	26	0.162	2.265
MotTr	36	0.167	0.063	28	0.065	0.019	27	0.123	1.954
Leather	29	0.078	0.029	22	0.054	0.108	28	0.129	1.809
NmMP	32	0.075	0.018	32	0.038	0.045	29	0.340	4.996
Paper	28	0.073	0.024	25	0.035	0.061	30	0.232	3.316
Food	21	0.058	0.025	26	0.031	0.004	31	0.144	2.144
Tex.Prd	26	0.044	0.009	34	0.021	0.025	32	0.113	1.482
Chem	30	0.042	0.014	33	0.017	0.016	33	0.154	2.205
BM&A	33	0.024	0.041	37	0.015	0.014	34	0.174	2.399
Textiles	25	0.024	0.006	27	0.015	0.010	36	0.134	1.942
Ru-Pe-C	31	0.018	0.015	30	0.014	0.001	37	0.166	2.347
Bever'g	22	0.016	0.001	36	0.012	0.000	38	0.185	2.599
Tr.Eq.	37	0.013	0.011	31	0.011	0.006	41	0.116	2.143

Electricity (41), Other Manufacturing Industries (38), Leather (29), Non Metallic Mineral Products (32) show high K/L influence on employment dispersal. While NmMP (IN32) is moderately dispersed, other three show higher dispersal. EGS (IN41) and OMI (IN38) shower higher $(b/r)^2$ implying K/L is cause for dispersal in these capital goods industries. Leather (IN29) and Nonmetallic mineral products (IN32) showed lower $(b/r)^2$ meaning that K/L growth has caused to bring about dispersal in these Intermediates.

The least influence of K/L on employment dispersal of industries was seen in case of Transport (37), Beverages (IN22), Rubber-Petroleum-Coal (IN31), Textiles (IN25), Chemicals (IN30). But low (b /r) ^{2} means moderate dispersal in these has not come about through K/L influence.

Table:7.6.e

Regional Dispersal(HH) of Industries' output(NVA) in response to Capital productivity

(at current prices)1956-1995 Specification HH nva= a +b(K-productivity)
CV nva= a +b(K-productivity)

Ind.Name	Dispersal Measures			HH nva	HH nva	HH nva	CV nva	CV nva	CV nva
1	IN	CV nva	HH nva	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
Food	21	1.538	0.010	29	0.197	0.120	22	2.12	25.830
Bev'	22	2.714	0.193	37	0.113	0.079	29	0.906	2.996
Textiles	25	2.377	0.221	22	0.108	0.137	28	0.547	33.245
Tex Prd	26	2.827	0.102	30	0.097	0.094	27	0.445	2.750
Wood	27	3.101	0.216	28	0.062	0.107	36	0.365	0.469
Paper	28	2.021	0.152	26	0.053	0.936	33	0.277	0.364
Leather	29	3.193	0.360	32	0.039	0.007	38	0.242	0.373
Chemical	30	3.638	0.266	25	0.033	0.272	37	0.198	0.186
R-P-C	31	2.963	0.238	38	0.03	0.007	31	0.173	0.265
Nm MPrd	32	1.553	0.111	36	0.028	0.003	26	0.114	2.166
BM&A	33	2.623	0.197	21	0.028	0.098	41	0.131	0.078
Met. Prd	34	3.020	0.241	33	0.025	0.003	34	0.063	0.020
MotTr	36	2.423	0.188	34	0.021	0.002	25	0.062	0.349
Tr.Eq.	37	5.085	0.187	31	0.015	0.002	32	0.054	0.014
OMI	38	3.488	0.296	27	0.013	0.001	30	0.053	0.702
EGS	41	2.691	0.173	41	0.011	0.001	21	0.044	0.242

Influence of Capital Productivity on NVA dispersal is more in Leather (IN29), Beverages (IN22), Paper (IN28), Manufacturing other than Transport (IN36) and Other Manufacturing Industries (IN38). Dispersal being relatively high, (b /r) ^{2} in terms of HH does not show to be an capital productivity influence to be a determining factor in bringing about dispersal in NVA in these industries in the long run.

Table: 7.5.f

Regional Dispersal(CV&HH) of Industries' employment in response to Capital productivity (at current prices) 1956-95
Specification CV emp =a +b(K-productivity);
HH emp = a +b(K-productivity)

	Industrial Dispersal		CV emp	CV emp	CV emp	Hhemp	HH emp	HH emp	
Ind.Name	IN	HH emp	CV emp	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food Pro	21	0.112	1.593	22	1.72	21.753	22	0.232	0.168
Beverages	22	0.414	4.684	29	1.466	6.229	32	0.093	0.022
Textiles	25	0.148	2.087	32	0.861	1.065	29	0.066	0.013
Textile Prd	26	0.162	2.265	27	0.476	0.478	33	0.064	0.022
Wood	27	0.123	1.954	26	0.433	0.747	30	0.062	0.133
Paper	28	0.129	1.809	38	0.289	5.568	34	0.047	0.041
Leather	29	0.340	4.996	25	0.082	0.032	37	0.041	0.016
Chemical	30	0.232	3.316	36	0.061	0.050	26	0.041	0.005
Ru-Pet-Co	31	0.144	2.144	30	0.053	0.003	38	0.038	0.111
Nm MPrd	32	0.113	1.482	34	0.037	0.004	41	0.036	0.013
BM&A	33	0.154	2.205	33	0.032	0.005	36	0.031	0.087
Metal Prd	34	0.174	2.399	28	0.017	0.001	21	0.029	0.004
MotTr	36	0.134	1.942	41	0.017	0.007	27	0.021	0.002
Tr.Eq.	37	0.166	2.347	31	0.015	0.004	28	0.017	0.001
OMI	38	0.185	2.599	21	0.012	0.005	25	0.016	0.013
EGS	41	0.116	2.143	37	0.07	0.046	31	0.012	0.002

In the long term, influence of capital productivity is higher in Beverages (IN22), Leather (IN29), Non-Metallic Mineral product (IN32) in both measures. Leather (IN29) and Beverages (IN22) show dispersal largely due to influence of higher influence of capital productivity on employment dispersal in both measures.

Low influence of capital productivity on employment dispersal in the long run is seen in Rubber-Petroleum and Coal (IN31), Transport (IN37), Food (IN21), Electricity (IN41) manifest in dispersal except Food that showed more concentration and capital productivity was not the cause of dispersal or concentration in the long run.

Table: 7.6.g

Regional Dispersal(CV) of Industries' output(NVA) in response to Labor productivity (at current prices) 1956-95 Specification: CV nva = a +b(L-productivity) HH nva = a +b(L-productivity)

	Measures of Industrial Dispersal			CV nva	CV nva	CV nva	HH nva	HH nva	HH nva
Ind.Name	IN Code	CV nva	HH nva	IN Code	$\hat{\beta}$	(b /r)2	IN Code	$\hat{\beta}$	(b /r)2
1	2	3	4	5	6	7	8	9	10
Food Pro	21	1.538	0.010	29	0.725	5.906	41	0.2	0.171
Beverages	22	2.714	0.193	34	0.421	0.269	22	0.198	0.109
Textiles	25	2.377	0.221	41	0.343	0.566	29	0.193	0.122
Textile Prd	26	2.827	0.102	31	0.325	0.461	38	0.19	0.144
Wood	27	3.101	0.216	38	0.246	0.393	25	0.135	1.302
Paper	28	2.021	0.152	22	0.245	0.406	27	0.114	0.054
Leather	29	3.193	0.360	33	0.238	0.320	36	0.079	0.018
Chemical	30	3.638	0.266	30	0.224	0.865	37	0.054	0.194
Ru-P-Co	31	2.963	0.238	26	0.126	0.338	32	0.048	0.010
Nm MPrd	32	1.553	0.111	36	0.12	0.039	34	0.043	0.003
BM&A	33	2.623	0.197	28	0.108	0.041	21	0.038	0.072
Metal Prd	34	3.020	0.241	27	0.107	0.049	30	0.035	0.038
MotTr	36	2.423	0.188	25	0.082	0.240	31	0.028	0.003
Tr.Eq.	37	5.085	0.187	32	0.064	0.012	33	0.015	0.001
OMI	38	3.488	0.296	21	0.063	0.173	26	0.013	0.002
EGS	41	2.691	0.173	37	0.011	0.001	28	0.011	0.002

A 40year regression of NVA dispersal on L productivity shows maximum Labor productivity influence on Leather (29), Electricity (41), Other Manufacturing Industries (38) and Beverages (22). High dispersal with higher $(b/r)^2$ shows Net Value Added (NVA) dispersal has been due to the influence of Labor Productivity. This is an interesting result since contrary to common understanding, capital goods industries like OMI and EGS show that dispersal can occur due to influence of Labor productivity growth.

Labor Productivity showed least influence on NVA dispersal in industries such as Transport Equipment (IN37), Food Products (IN21), Non metallic mineral Products (IN33), Paper (IN28), Textile Products (In26) and Manufacturing other than Transport (IN36). $(b/r)^2$ being low in L-intensive industries like Food, Textile Products and Paper means low Labor productivity influence did not impact dispersal/concentration in the long run.

Table:7.6.h

Regional Dispersal(HH&CV)of Industries' employment in response to Labor-productivity

(at current prices) 1956-95

Specification: HH emp = a +b(L-productivity); CV emp = a +b(L-productivity)

	Measures of Industrial Dispersal			HH emp	HH emp	HH emp	CV emp	CV emp	CV emp
Ind.Name	IN	HH emp	CV emp	Industry	$\hat{\beta}$	$(b/r)^2$	Industry	$\hat{\beta}$	$(b/r)^2$
1	2	3	4	5	6	7	8	9	10
Food Pro	21	0.112	1.593	38	0.321	0.873	38	0.308	0.747
Beverage	22	0.414	4.684	21	0.095	0.028	33	0.108	0.164
Textiles	25	0.148	2.087	33	0.086	0.284	30	0.099	0.071
Textile Prd	26	0.162	2.265	28	0.071	0.229	41	0.088	0.066
Wood	27	0.123	1.954	41	0.069	0.038	22	0.076	0.038
Paper	28	0.129	1.809	36	0.065	0.008	26	0.047	0.009
Leather	29	0.340	4.996	26	0.059	0.016	21	0.042	0.016
Chemical	30	0.232	3.316	25	0.058	0.029	36	0.041	0.029
Ru-P-Co	31	0.144	2.144	32	0.04	0.050	32	0.038	0.007
Nm MPrd	32	0.113	1.482	30	0.034	0.007	34	0.035	0.010
BM&A	33	0.154	2.205	27	0.033	0.039	27	0.027	0.043
Metal Prd	34	0.174	2.399	34	0.031	0.019	25	0.024	0.006
MotTr	36	0.134	1.942	31	0.03	0.011	31	0.023	0.003
Tr.Eq.	37	0.166	2.347	29	0.02	0.001	28	0.019	0.002
OMI	38	0.185	2.599	22	0.018	0.003	37	0.016	0.017
EGS	41	0.116	2.143	37	0.017	0.018	29	0.014	0.001

Labor productivity shows maximum influence on employment dispersal in Other Manufacturing Industries (38), Food Products (21), Basic Metals and Alloys (33), Electricity (41), Textile Products (26). Low $(b/r)^2$ and concentration in Food, EGS and Textile Products means high influence of Labor productivity on employment dispersal did not cause to bring about dispersal. However, OMI (IN38) and Basic Metals and Alloys (IN33) has shown dispersal with higher $(b/r)^2$ implying high influence of Labor Productivity on employment dispersal did cause to bring about employment dispersal in this capital goods (IN38) and the Intermediate (IN33) industry.

Section 7.7:
Summary and Major Findings:

Wood (IN27) comes out as an industry needing attention at least for purposes of employment planning and to boost employment in this wood industry. This will boost rural entrepreneur-ship and rural employment and being L-intensive and can be used massively for poverty alleviation programme. Adequate marketing can boost tourism in service, housing and improve infrastructure and provide a base for industrial growth and trade.

In 1966-75, the decadal period of recession, Non-Metallic Mineral Products (In32), Basic Metals and Alloys (IN33), Metal Products (IN34), Machinery other than Transport (IN36) showed $(b/r)^2$ higher implying even in capital goods industry and intermediates with higher capital intensive-ness, recession was a cause for low TFPG influence and not so high Employment dispersal. Food was more concentrated and so high K/L influence could not bring about NVA dispersal of Food Industry. Thus recession not only affected the machine oriented goods industry, it also affected the main agro-industry in India too. K/L growth did not influence NVA dispersal in Textiles (IN25) and Machinery other than Transport (IN36) but it did influence employment dispersal in these industries despite recession. NVA of Intermediates like Leather (IN29) Chemicals (IN30) and Rubber (IN31) dispersed due to capital productivity influence. While $(b/r)^2$ is relatively high, influence of Labor productivity in this period of 1966-75, did not bring about dispersal in Food Industry, a point that reinforces the inference presented in this paragraph before. Similarly, $(b/r)^2$ in HH is relatively high in Rubber-petroleum and Coal (IN31) and despite low influence of Labor productivity on employment dispersal in terms of b^, policy recommendation is in terms of raising Labor Productivity, as dispersal is due to influence of Labor productivity. Labor productivity influence did not bring about employment dispersal in this Food (IN21), a fact that can be again attributed to recession.

Textile Products (26), Chemicals (IN30), Rubber-Petroleum-Coal (IN31) and Machinery other than Transport (IN36) with high b/r did not bring about high employment dispersal in this period of 1976-85.

In Rubber, Chemicals and Basic Metals, that are traditional highly capital intensive did show higher dispersal in this period of 1976-85 but it was again not due to influence of K/L.

In 1986-95, Food Industry still showed concentration. Dispersal being higher in Chemicals, high $(b/r)^2$ showed influence of Labor Productivity on NVA dispersal in this decade. In Basic Metals, high b /r could not bring about much NVA dispersal in this decade. Thus Intermediates have not shown dispersal despite its potential. Leather showed dispersal in last decade both in NVA and in employment due to influence of capital productivity.

The long run analysis of 40years from 1956-95 revealed certain interesting results. High NVA dispersal and high $(b/r)^2$ in Chemicals (IN30) means that low TFPG influence as revealed in b^, itself is a factor for dispersal in this industry. Chemicals Industry (IN30) to sustain itself as a leading industry for balanced industrial development will have to find ways to improve its TFPG.

Basic Metals and Alloys (IN33) and Metal products (IN34), both being capital intensive Intermediates showed high TFPG influencing dispersal, while NmMP (IN32) being of similar nature as IN33 and IN34 showed concentration or non- dispersal with little TFPG influence on employment dispersal. Thus employment dispersal in these intermediates having shown themselves amenable to higher TFPG, it is necessary that a more detailed input-output planning exercises involving Intermediates is called for. The Economic Reforms of 1990s has not taken Intermediates Planning into account that would have a factor for regional equity and growth in Indian economy.

Chapter-8

Major Findings and Policy Guidelines

Industrialization is a "process in which changes in a series of strategical production functions are taking place"[1] involving mechanization of an enterprise, building up of a new industry, opening up of a new market and/or exploitation of a new territory involving a process of deepening and widening of capital. Towards this, an integrated approach to Industrial Development in India over 1956-95 was sought for, making use of the estimated parameters, viz. Partial Productivity of Labor and of Capital, Capital Intensity, Output Elasticities of Factors of Production and Returns to Scale, to trace Causal Linkage Relationships among these measurements. This helped to assess the economic mechanisms for growth in industries' output caused by TFP Growth or otherwise, in either case, due to other factors; and to what extent. Further, analysis of Regional Dispersal of each industry group in terms of size variables and structural relationships among Small States and UT and Large States for comparative knowledge of the effects of size of regions on specificity of industries' was undertaken. The extent of Industrial Dispersal was traced across States and Union Territories over different time periods of each successive decade and of a total of 40 years, 1956-95. This provided to understand causal effects over time as to test Self-Perpetuation vis-vis Williamson Hypothesis. The influence of Total factor Productivity (TFP), Capital Intensity (K/L), Capital Productivity and Labor Productivity, each on Regional Dispersal Measures of Net Value Added (NVA) and Employment (NW) of each industry group was analyzed to establish Causal Relationships. This was cross- checked by tools of Grossack's[2] study framework to substantiate the extent of contributions by each of the explanatory variables to Regional Dispersal of NVA and Employment in each of the 2-digit industries under study. All those analytical tools of study provided the extent of contributions of the common set of explanatory variables to growth and to regional dispersal of each Industry Group in India.

1-Pei-Kang Change- ***Agriculture and Industrialization***, Cambridge, Massachusetts, Harvard University Press, 1949, pp-19. 2- Grossack, Irvin, M- The Concept and Measurement of Permanent Industrial Concentration. ***Journal of Political Economy***, Vol-60A-1972, pp-745-760.

The Study was benefited by Review of International Studies versus Indian Industry covering the issues of Returns to Scale, Capital Intensity, Total Factor Productivity (TFP), Partial Productivities, Output Growth and Employment Growth as to assess the importance of factors that contributed to industrial growth.

An analysis of Growth Rates of Factories made clear that Food Industry (IN21) grew at a maximum of 33.1%p.a. to meet the consumption of a densely populated nation indicating growth and spread of food industries. Then followed the Intermediate Input Based Industries succeeded by Capital Goods Industries.

Food Products (IN21) Industry provides vital linkages and synergization with agriculture and industry. This has been identified as a thrust area and is covered as priority area. Most food processing industries have been exempted from industrial licensing except beer alcohol and those reserved under SSI. For many processed food items automatic approval for even 100% equity in form of FDI is available. Some of the structural problems that stymie growth are low value addition to raw produce, High wastage, low level of processing, highly fragmented processing capacities, limited access to technology, poor marketing network, unusually long supply chain, multiplicity of regulations, lack of infrastructures. However this industry provides an opportunity for fostering public private partnership. All these can increase returns to scale and act as base for meeting consumption needs of industrial workers and bring about higher returns.

Chapter4 analysis of Growth Rates of Factories revealed Food Products Industry (IN21) growing at a maximum growth rate of 33.1%, followed by User and intermediates Industries. The Comparative Study of Industries' growth rates of Factories brought out possible weak forward and backward linkages and lack of implementation in terms of numbers corresponding to planning goals.

Net Value Added (NVA) growth rate was the highest in Electricity, Gas and Steam (EGS) at 18.1% followed by growth rate on Textile Products (IN26), with lowest growth rate being recorded by Textiles (IN25), indicating lack of appropriate production planning and weak linkages.

Low growth rates in employment in number of workers in most of the industries except Food Products Industry (IN21) confirmed that most industries in India are low labor intensive ones. Low employment growth rate figures n Beverages (2.2%), Textiles (2.3%) and OMI (1.8%) pointed to lacunae in employment planning and thereby hinted at greater employment absorption capacity.

NVA Growth being the highest for EGS at 18.1%, followed by Textile Products (IN26) at 17.2%, Food (IN21) at 12.6% and Textiles (IN25) at 10.1% indicated priority to non-durable consumption. Employment growth rates revealed lower magnitudes in most industries except Food (IN21) due to low Labor Intensive-ness in large, medium and small industries. NW/FACT was the lowest in Textile Products (IN26). FC growth rate was the highest in EGS (IN41) at 14.4% contributing to high NVA growth rate in EGS. FC growth rate was high also in Metal and Mineral Industries that led to their high NVA and GVA growth rates. Growth rates in FC/Fact however showed low growth rates as Factory growth rates was better than FC growth rates since FC was facing shackles due to increasing prices and uncertain license –permit regime. Capital Intensity (KI2=FC/NW) growth rates were higher in Textile (IN25), followed by Basic Metals (IN33) and Chemicals (IN30), all being Intermediates, which indicate high linkages, both backward and forward, that reveals potential to act as leading industries for overall growth and development of the industries in the economy. However, Other Manufacturing Industries (IN38) had low growth of KI2 that could be due to clustering, assembly line production and further decentralization and low Labor Intensity, if globalization is to lead to broad based industrial growth in the country.

In analyzing growth rates of GVA/FACT (O1F) and NVA/FACT (O2F), the ordering of industries are similar. In both measures, EGS (IN41) led followed by Textile Products (IN26) at 9.8% and in O1F OMI (IN38) showed 9.1% growth. The lowest growth rate in these measures were in Beverages (IN22), Non-Metallic Mineral Products (IN32), Wood (IN27) and Textiles (IN25). But growth rates in factories being higher and O2F and O1F being lower reveals fragmentation of industries like Beverages (IN22), Textiles (IN25), Wood (IN27) in the long term and even if dispersed, commensurate outputs would be low. Thus there is need for strengthening surveillance mechanism and follow-up of credit delivery off-take by FIs to these industries.

Growth Rate in Fixed Capital (FC) was the highest in Electricity, Gas and Steam (IN41) that is also inferred to be the cause of recording highest NVA growth rate in EGS (IN41). But Intermediates showed low FC growth rate and bolstering FC in these with proper Regional Input Output Planning can alter the overall investment climate.

The highest growth in Capital Intensity was shown in Textiles (IN25) and Capital productivity Growth Rate in Textile Products (IN26) influenced positively its NVA and GVA growth rates. Higher Labor Productivity growth rates in many industries (OMI recorded the highest) contributed to work force growth and in turn to labor intensity, hinting at scale operation leading to both factor intensification and factor productivities and that in turn to NVA and GVA growth. All these results envisaged greater role for Total Factor Productivity (TFP).

Partial Productivity measures of Capital like K1P (GVA/FC) and K2P (NVA/FC) gave similar results in respect of growth rate and ordering of industries, though differing marginally. In case of all industries, Capital Productivity influenced positively its NVA and GVA growth rates. This finding signifies role of FC, K-productivity, Capital Intensity, in all registered large, medium and small- scale industries. However, increasing the scale of operation might influence positively each other’s capital intensity, Labor productivity and capital productivity.

The analysis of TFP was undertaken in the framework of Hicksian neutral technological progress. Neutrality implies neither of the Factors’ Partial Productivities have influence to raise technical progress to indicate that no single factor of production is responsible to cause Technical Progress (TP). Hence, the measure of Total Factor Productivity (TFP) is a residual over and above those factors’ contribution to NVA or GVA Growth or TFP as a ratio measure of TFP to be more than unity. Whether capital intensity (K/L) is reflected in higher growth of output and employment or Partial Productivities of Labor and Capital or TFPG in individual industries caused for higher growth was discussed.

Analysis of Total Factor Productivity of individual industries by Kendrick, Domar and Solow showed that Wood (IN27) Industry had Maximum TFP due to Kendrick ratio and

Domar Residual methods. The lowest TFP was noticed in Chemicals (IN30) and Textiles (IN25). Chemicals was a sunrise industry in 1970s and 1980s to which further Technical Progress and Capital were needed to be injected to take advantage of it. Textiles also needed further injection of capital , modernization, upgradation to the latest technologies to get a boost in efficiency. This being a Labor Intensive industry showed capital intensity growth rate sharply.

In Solow, Labor intensive industries like Paper (IN28), Beverages (IN22), Food (IN21) showed little TFP growth, with low index. TFP growth in Wood (IN27) was high.

TFPG was the maximum in Wood Industry (IN27) and with Chemicals (IN30), Textiles (IN25) and Basic Metals (IN33) also showing higher growth rates, meant Smaller States can grow faster.

Ranking revealed that Food and EGS ranked high in Factories and NW growth rates. Textiles showed remarkable consistency in both Labor Productivity and Employment growth rates. Leather and Beverage, though Labor Intensive, had high FC growth rate that contributed to high output growth.

Food (IN21) topped with respect to Factories' growth rate vis-avis All India Industries but 12th in ranking with respect to FC growth rate and 14th in NVA and GVA growth rates. EGS (IN41) tops in FC, NVA and GVA growth rates but 13th in Factories' and 12th in Employment growth rates.

The lower ranks in some Intermediates and Consumer Goods Industries than All India growth rates were due to Low factor productivities and Low TFPG. There is need for both Capital, skilled and unskilled Labor intensification in all industries of all states and UT to minimize unemployment, underemployment and regional disparities in industrial development and growth.

The highest TFPG due to K/L was in Wood (IN27), Beverages (IN22) and Textile Products (IN26). Lower influence of K/L on TFPG was found in Basic Metals (IN33), EGS (IN41), Transport (IN37), Paper (IN28) and Electrical and Non-Electrical Machinery other than Transport (IN36) which were contrary to the usual notion that higher K/L causally influences higher TFPG in Capital Intensive Industry. OMI (IN38) showed higher influences of K/L growth on TFPG than in many Capital Goods and Intermediate Goods Industries.

EGS showed maximum influence of TFPG on NVA growth followed by Textiles (IN25), Machinery other than Transport (IN36), Basic Metals (IN33) and Rubber, Petroleum and Coal (IN31). However, lower influences of TFPG on NVA were found in Textile Products (IN26), Wood (IN27) and Leather (IN29). Infuence of TFPG on GVA was similar, though highest influence was in Metal Products (IN34), a Capital Intensive Intermediate, followed by Beverage, OMI and Leather.

Employment Growth showed the highest influence of TFPG as noted in Metal Products (IN34), followed by Machinery other than Transport (IN36) and Beverages (IN22). Employment growth in Basic Metals (IN33), Textiles (IN25), Paper (IN28) showed inperviousness to TFPG growth. However, TFPG influence to raise employment growth is imperative to employment growth both in Capital intensive and Labor-intensive Industries.

Influence of K-Productivity on output measures show higher influence in Beverages, Food, Leather and Paper. NmMP and RPC also show same influence of Capital Productivity on either GVA or in NVA. On Employment growth, K-productivity is strongest in Leather, followed by Beverages, RPC and Food. These results show the need to have policy to increase Capital Productivity in L-productivity industries. Lower influences in EGS (IN41) and Transport (IN37) show that probably K/L and/ or TFPG in these K-Intensive Industries needs to be increased, L-Productivity influence on NVA in them being already higher.

Regression of Labor Productivity on output measures, especially on NVA show higher influence in Textile Products (IN26), Beverages (IN22) and OMI (IN38). Lowest influence is seen in Chemicals (IN30). L-productivity influence on GVA was higher in OMI (IN38), EGS (IN41) and Transport (IN37), all Capital Intensive Industries. Labor productivity influence was least in Food (IN21) whose SSIs do not employ highly skilled Labor as productivity is not a major concern for units selling in the local market. Rubber, Petroleum and Coal (IN31) showed the least influence. Similarly, influence of Labor productivity on employment growth, show maximum influence in Textile Products (IN26), Rubber, Petroleum and Coal (IN31) and Textile Products (IN26) but lowest in Textiles (IN25). Though Labor productivity growth was the highest in Textiles (IN25) both in L1P and L2P, it did not influence Employment growth. In Rubber Petroleum and Coal (IN31) while Labor Productivity showed low influence on output growth, its contribution to employment growth was high.

Analyzing Returns to scale, the maximum returns is noticed in Textiles (IN25) followed by Chemicals (IN30), Non-Mineral Mineral Products (IN32) and Electrical and Non Electrical Machinery other than Transport (IN36).

Temporal Shifts is noticed in Textiles (IN25) and recession did not dampen scale economies. In 1966-75, most industries showed IRS but Transport showed CRS. But in last decade, all industries showed CRS except Beverages (IRS).

Some Industries show perennially low returns such as Basic Metals and Alloys (IN33), Rubber Petroleum and Coal (IN31), Beverages (IN22) and OMI (IN38). While onslaught of economic reforms left Basic Metals, an Intermediate high and dry, OMI needs special attention as it is capable of quick decentralization and act as catalyst for raising Capital Intensiveness and machine efficiency in many Capital Goods and Consumption goods Industries. OMI is amenable to SSI production and requires medium scale investment needs where Commercial Banks can play a large role as lender to potentially efficient entrepreneurs. The problems facing this industry is fragmentation of the market, low awareness of demand potential, design marketing and lack of liasoning with international producers in East Asia. It can quickly reach out to rural areas and create demand there.

A Causal Analysis showed highest TFPG due to K/L was in Beverages, but lowest in Basic Metals, contrary to common understanding. Influence of TFPG on NVA showed maximum influence in EGS (IN41), followed by Textiles (IN25) and Machinery other than Transport (IN36). On GVA growth, maximum influence of TFPG was in Metal Products (IN34), followed by Beverages (IN22) and OMI (IN38). Similarly, TFP influence on Employment growth rate showed maximum effect on Metal Products (IN34), followed by Machinery other than Transport (IN36) and Beverages (IN22). Thus TFPG influence was seen in both Labor Intensive and Capital Intensive Industries. Lowest TFPG influence in Output (GVA) and employment growth rates was noticed in Wood (IN27).

Influence of Capital Productivity on GVA was the highest in NmMP (IN32), followed by Paper (IN28), Beverages (IN22) and Leather (IN29). Influence of Capital Productivity on NVA was the maximum in Beverages (IN22), followed by Leather and RPC (IN31). Influence of Capital Productivity on employment was highest n Leather (IN29), followed by Beverages (IN22) and RPC (IN31). So improvement in Capital Productivity may be the key to raising the Labor Intensive-ness of Industries.

Labor Productivity is high in generally those industries were Capital Productivity was low. But highest Labor Productivity influence on NVA was in Transport Equipment (IN37) followed by RPC (IN31). Highest Labor productivity influence on GVA growth was in OMI (IN38) followed by transport Equipment (IN37) and then by EGS (IN41). On Employment, highest influence of Labor Productivity was in Leather (IN29), though Textile Products (IN26) and RPC (IN31) also ranked higher, though it recorded lower figures.

Thus despite high growth in Units, to reap scale economies, a proper agricultural environment and high expectations need to be maintained and nurtured which slackened during the decade of New Economic reforms period. Transport is another industry that showed inconsistent scale economies largely due to inadequate planning. Also, higher growth rate in units does not necessarily bring about scale economies. To improve scale economies, an enabling environment, innovative marketing techniques, development of support infrastructure are necessary. These are conspicuous by their absence in a developing economy due to inadequacy of resources for balanced development of industries and of regions/states/districts; rural vs urban diversity and forward vs backward states/regions. Hence, the following Chapters address to regional dispersal of industries, measures and causal factors for regional dispersal vs. growth, TFPG, Capital Intensity, Factor Productivities, Returns to Scale of Industries, etc. Increasing returns to scale in many industries was noted independent of TFPG. This could be due to higher factor productivities, accrued in turn from output elasticities to those factors/inputs, which was again independent of factor intensities and growth rates of Industries concerned. It may be further concluded that TFPG and output growth and factor productivities caused for increasing returns to scale in many and constant returns to scale in a few.; but the converse necessarily hold good in the sense that returns to scale may remain independent of TFPG of disembodied (Neutral TP) and embodied type.

In the **next Chapter**5, results of Dispersal Analysis of Indian Industries over Smaller Sized States, Larger Sized States and all States and Union Territories taken together was presented. Small States and UT can show how industrial progress can be size cum location specific. Large States and UT provide greater scope for large-scale highly capital intensive industries to develop. All States and UT taken together can provide a more comprehensive view of industrial dispersal irrespective of size of regions.

As regards the Small States Category, in 1959-65, Food (IN21), Textiles (IN25),Metal Products (IN34) and Transport (IN37) provided consistent and continuous data to yield results for analytic interpretation. Food (IN21) is highly dispersed. This industry, being a User-Based, Consumption Goods Industry with characteristics of non-durability of commodity, Capital Malleability, L-intensiveness and output growth being a possible outcome of low investment. All these characteristics suit small States Category at initial stages of Industrialization.

The later decades saw some changes and improvement. In 1966-75, Food (IN21) maintained high dispersal, though Machinery other than Transport (IN37) an Other Manufacturing Industries (IN38) did not lag behind. This was a good sign for building up bases for future industrial and economic development in smaller States and union territories that are predominantly agricultural, feudalistic social structure and lesser accessibility to capital. However, other User-Based Industries did not do well and recession further reduced incentives for expansion and dispersal.

The decade 1976-85 saw Food (IN21) still maintaining high dispersal trend. But other L-intensive and Capital Goods industries also showed dispersal like Leather (IN29) and EGS (IN41). Capital Goods and Intermediate Industries like Transport (IN37), Rubber, Petroleum and Coal (IN31) and Basic Metals and Alloys (IN33) also showed dispersal. So Indian Economy and Industries were showing signs of maturing after having withstood recession, inflation, war, etc. But lack of forward and backward linkage planning could not provide sound infrastructure base as revealed by relative lower dispersal in Transport (IN37), that was a cause of lower growth in 1980s, 1990s and 2000s.

The last decade of our analysis 1986-95 saw user based and Intermediate Industries like Textile Products (IN26) showing high dispersal. This was a sign of great vitality for Indian Industry and Economy. Indian Industry not only showed sense of great cost effectiveness as Labor was relatively cheaper, this industry showed high market sense being aware of the need to be location specific, nearer to areas of market demand. EGS (IN41) did well showing relevance of proposal for greater decentralization of power reforms. But Industries showing mean values nearer to lowest CV and HH values imply that goal of balanced regional development is till distant.

In case of Large States and UT category, data availability in the initial years was a distinct advantage over Smaller States and UT and it also showed the viability of larger regions to provide supportive infrastructure for industries to flourish.

The first decade 1959-65 saw Wood (IN27), Metal Products (IN34), Transport (IN37) showing higher dispersal. This is different from results in case of Smaller States where apart from the less number of industries, Food (IN21) being a User Based Industry showed maximum dispersal. Thus Large States Category has more economic space to develop for Intermediate Goods Industries to develop to provide a basis for deeper linkage and more integrated planning for more balanced industrial and economic development than small regions.

The next decade 1966-75, despite being recession stricken, showed dispersal in more User Based and Intermediate Industries, a feature that got manifested in 1976-85 in case of Smaller States and UT category. But capital Intensive Industries like Other Manufacturing Industry (IN38), EGS (IN41), Chemicals (IN31), Rubber Petroleum and Coal (IN31), Non-Metallic Mineral Products (IN32) showed mean dispersal values nearer to lowest values. Thus Capital Intensive Goods Industries did not disperse well in the recession hit second decade.

In the third decade of 1976-85, Capital Intensive Industries renewed well to disperse more. Yet while Textiles (IN25) dispersed well, Textile Products (IN26) got concentrated. This revealed how lack of proper Input Output sector specific planning can retard the goal of Balanced Regional Development.

The last decade of 1986-95 showed industries getting dispersed in some variable and not in others. This phase of experimentation showed that planning was not in tune with market sentiments. For Example in Metal Products (IN34) employment (NW) showed mean values nearer highest values but in other dispersal variables of this industry, mean value was nearer the lowest value. So while entrepreneurial initiative went on to create more employment dispersal, PK, NVA, Units showed concentration. This was a policy lacunae as PK injection could have brought about more growth and helped this Intermediate Industry to develop as a ‘leading’ Industry in the liberalized, globalized era.

In the third category, All States and UT are taken together and dispersal results found out for both the long term of 40 years and 4 decadal periods of 1959-65, 1966-75, 1976-85 and 1986-95.

In the long-term 40-year period, in Food (IN21), dispersal in Productive capital was high but not so in other variables. This showed that though capital injection has been forthcoming, much of it was eaten away by conspicuous consumption. This backwardness of agriculture and high population growth may have the other causes of lower than expected dispersal of employment, units, NVA, K/L in this Industry.

In Beverages (IN22) though employment dispersal was high, it pointed to disguised employment. In Intermediates and Capital Goods Industry showed relatively less dispersal in long term when All States and UT were taken together. In Paper (IN28) employment was concentrated but other variables showed dispersal. Industries that needed big push are Non Metallic Mineral Products (IN32), EGS (IN41), Basic Metals and Alloys (IN33), Paper (IN28), Machinery other than Transport (IN36) and OMI (IN38) for decentralization.

In the Period Wise analysis, the first decade of 1959-65 recorded highest dispersal in Beverages (IN22), Leather (IN29), Chemicals (IN31) and Basic Metals and Alloys (IN33). NVA in Metal Products (IN34) was more concentrated. So also in Transport (IN37) where all dispersal values were nearer the mean values. In the second decade of 1966-75, Beverages (IN22), Leather (IN29), OMI (IN38) showed high dispersal. In the third decade in 1976-85, EGS (IN41), Beverages (IN22) along with Chemicals (IN30) and RPC (IN31) showed higher dispersal. In the fourth decade of 1986-95,Leather (IN29) EGS (IN41) showed higher dispersal. But employment dispersal in Food (IN21) in this decade of liberalization measures showed lowest dispersal. Wood (IN27) revealed high concentration. K/L measure of dispersal revealed concentration in most industries. Thus liberalization is less oriented towards rural areas, consumption User Based Industries and less capital injection through planning mechanism is taking place. Low K/L dispersal is seen in Machinery other than Transport (IN36), Metal Products (IN34) and Transport (IN37).

Conclusion and Policy Inferences- Period Wise:

1959-65:

Metal Products (IN34) showed more relative concentration in case of Small states Group and All States in India. But this industry did disperse well in 1986-95,

1966-75:

In both large states and small states separately in each group, capital intensive industries did not show dispersal. But in case of All states and UT being taken together, Except for three Industry groups, viz; Electricity Gas and Steam (IN41), Basic Metals and Alloys (IN33) and Machinery other than transport (IN36), most other Capital Intensive industries like Chemicals (IN30), Transport Equipment (IN37), Rubber-Petroleum-Coal (IN31), Other Manufacturing Industries (IN38) showed mean values nearer to the lowest dispersal values.

While Leather, Paper, Wood, Beverages showed high dispersal, Textile, Textile Products, Food showed mean dispersal values nearer to lowest values of the variables.

1976-85:

Transport (IN37), Textile Products (IN26) in both Small and Large States and Chemicals (IN30) in Small States showed less dispersal. Textiles showed greater dispersal in both Small States and Large States but Textiles Products showed less dispersal

1986-95:

Metal Products (IN34) showed regional dispersal in All States and Union Territories (UT).

Smaller states and UT failed in many fronts except in Textile Products, Machinery other than Transport and Transport Equipment where high dispersal is noted. But in Large States, NVA in Beverages (IN22), but Non Metallic Mineral Products (IN32) and CV of OMI (IN38) showed more concentration. In All States, Food, Wood emp, showed less dispersal. Food employment may be temporary once a long term planning of this industry comes into operation. But K/L dispersal being low in capital goods industry like Electrical and Non electrical machinery (IN36) and transport (IN37) show employment dispersal in these industries as not spreading out.

Industry Specific Policy Recommendation:

In the recent two decades of policy initiatives of increasing trade, macro economic stabilization and industrial liberalization, Food and Wood are the two are exceptions being directly land based.

In All States and long term 40-year case, Beverages Industry showed higher dispersal in employment but less so in the other four variables. Improvement of labor productivity and greater marketing innovation need to be devised to help in Beverages Industry dispersal.

For the 40 year All States and Union Territories, Wood (IN27), Paper (IN28), Non-Metallic Mineral Products (IN32), Basic Metals and Alloys (IN33), Machinery other than transport, Electricity, Gas and Steam (IN41) having mean values of variables and Structural ratios nearer the lowest values, implied that these industries were relatively less dispersed over the long term.

So policy directions should enable capital goods and intermediates industries to be more decentralized/ regionally dispersed. Intermediate goods Industries must be dispersed after a careful study of linkages, both backward and forward, and institutional set up and behavior of the Indian economy. Paper and Wood Industries, being L intensive industries, have greater potential for employment absorption. Employment planning in these industries should be based on regional resource linkages.

Wood (IN27) also did well in Small states category in the first and third decades but showed more concentration in second 'recession' decade. But Wood (IN27) showed more concentration in each of the five variables in the All States-40year long- term category and in 1986-95 period in All States Category. This Intermediate provides inputs to Paper, Ship-Building, Housing, Transport (Trucks' body), Sports Goods, etc. and so market demand surveys, developing marketing channels for its products, intensive agroforestry programmes, reduction of illegal felling of trees with a greater role for decentralized political authority, etc will help make this industry getting more dispersed and raising its value addition potential and make greater contribution to national income.

Food Products (IN21), a key industry linking agriculture and industry, showed less dispersal in most variables (except PK in 1959-95 in All States category) in the long term. This was supported by Food Industry (IN21) getting concentrated in 1959-95 for Large States Category. More regional Planning in an Input –Output Frame outlining its Intermediate Input

Coefficient for regional skill based Industries will cause for greater dispersal in Food Industry.

Non-Metallic Mineral Products, EGS, Basic Metals and Alloys, Machinery other than Transport, being the industries that showed more relative concentration over long term in All States and UT Category implied that Greater Regional Planning in these in an Input- Output frame will bring out their growth potential that will cause for dispersal. EGS can revitalize and enhance power availability and provide much needed lateral boost to industrialization, Machinery other than transport (IN36) must be made amenable to decentralization, this being a key capital goods industry. Probably greater R&D will enable MotTr (IN36) industry to be more dispersed over the regions in the future.

The **next Chapter6** saw a diagrammatic representation of results of dispersal of all variables of each of the industries over the long term of 40- year period. Long-term analysis has the advantage of revealing the nature and perspectival background of industrial dispersal in India. Long term trends subsume short term ones.

Food (IN21) showed spurt in public Investment in 1974 and mid 60s recession affected this industry's dispersal of NVA. Low dispersal since 1977 was the real cause of poverty and high food prices in 1980s and later. But the year 1994 saw spurt in PK dispersal due to liberalization and capital flows.

Beverages (IN22) did not expand due to political and economic vicissitudes. But PK dispersal increased during recession of 1965-66. However, employment showed consistent dispersal even though the pre-1963 rise could not be sustained since this is a Labor- intensive industry and requires constant nurturing. But K/L got progressively concentrated implying any further boost to growth could come from higher K injection or increase in Labor productivity, capital productivity and TFP.

Textiles (IN25) showed progressive concentration due to lack of adequate government efforts to disperse this industry. This is reinforced by lack of employment dispersal along with PK concentration. But CV NVA stability around 2 may be due to innate resilience of this industry to do well despite opposition. So strong policy recommendation top boost employment and NVA in this crucial Labor intensive industry is needed.

Textile Products (IN26) showed high dispersal in Units, PK, employment. But Textiles (IN25) was concentrated showing lack of input –output planing region specific demand surveys in this industry. Perhaps lack of planning for technological obsolescence and innovation was cause of disorientation in output trends.

Wood (IN27) showed concentration. But PK dispersal was higher showing much optimism for growth in Wood Industry as this is a User and Intermediate Industry for infrastructure sector. But employment in this industry got concentrated and this was a cause for concern though NVA was dispersing. K/L is low, revealing high corruption and high unaccounted for commission culture.

Paper (IN28) showed long term concentration in all its variables and structural ratios. But being a Labor-intensive industry, great potential exists for growth. Leather (IN29) is more dispersed but there is scope for further employment dispersal along with need for greater capital infusion.

Chemicals (IN30) is more concentrated and needs more of institutional cum technological decentralization along with big push for this potentially leading industry due to scope for expansion in pharmaceuticals, fertilizers, etc.

RPC (IN31) is more concentrated though dispersal in NVA is high. NmMP (IN32) is concentrated but needs employment planning and more capital infusion. In Basic Metals (IN33) liberalization overlooked the industry’s potential. Metal Products (IN34), Machinery other than transport (IN36), Transport (IN37) are concentrated in long run.

In OMI (IN38) NVA is dispersed but other variables show concentration. Same results in EGS (IN41).

Finally, whether industrial growth leads to Perpetuation or Williamson and in which periods and in which industries therein, is brought out tentatively. Perpetuation is one where industrial growth leads to concentration in those periods, but later dispersal. Here growth leads to concentration and does not imply causation or growth causing dispersal. Williamson hypothesis implies initial growth with disparity but later concentration.

Thus study of long run dispersal of Indian Industries justified Perpetuation Hypothesis in case of inputs dispersal/concentration and since there is more concentration in Intermediate and Capital Goods Industries. This seemed inevitable because Indian economy is a capital scarce economy and K-allocation followed Heavy Industry model. But regional disparities manifested in 1970s, efforts to tackle this meant capital investment had to suffer.

Thus, while Consumer and User and Intermediates show greater dispersal, Capital Goods and Capital goods Intermediate are more concentrated in long term Indian Industrialization.

Beverages, Leather, Metal Products and EGS in each of the respective Groups show a contrary trend vis a vis trends in variables and structural ratios of their respective groups.

More clear-cut policy formulations await Chemicals, Electrical and Non electrical Machinery, Textile Products for each of these to act as leading sectors of growth.

Williamson hypothesis of Growth leading to dispersal in long- run is proved in Food Products (IN21), Textiles (IN25), Metal Products (IN34).

Wood (IN27), Textile Products (IN26), Transport Equipment (IN37) and Electrical and electronic machinery (IN36) prove Self-Perpetuation hypothesis. However, concentration comes about due to low growth and industry-specific and region specific policy packages to boost their key factor use to raise efficiency will help in greater dispersal of Indian Industry.

In **Chapter7**, the effect of various factors like TFP by Solow, K/L, K-productivity, L-productivity on each of the measures of dispersal, HH and CV, for each of the industries was studies and results inferred. Grossack's $(b/r)^2$ was computed to cross check influence of explanatory variables on each of the regional dispersal measures for each of the 2-digit industries.

Regression of TFP on regional dispersal measures of NVA for the short decadal period of 1959-65 yielded results that showed Textile Products (IN26), Textiles (IN25), Non-Metallic Mineral Products (IN32) bearing higher influence of TFP on NVA dipersal. When TFP was regressed on each of measures of regional dispersal of employment (HHNW and CVNW), greater influence was recorded in Textiles (IN25), Textile Products (IN26), Basic Metals and Alloys (IN33), Beverages (IN22), Rubber, Petroleum and Coal (IN31). But Food (IN21), OMI (IN38) and EGS (IN41), in this first decade, did not show TFP influence on employment dispersal**.** When K/L was regressed on employment (NW), Textiles (IN25), OMI (IN38) etc. showed larger influence of K/L on employment dispersal. But Leather (IN29) showed low K/L influence on Employment dispersal. Higher K/L influence was seen in Textiles (IN25), NmMP (IN32) and Metal Products (IN34). This is a useful result that showed K/L influences Intermediate Industries more to bring about dispersal. When K-productivity was regressed on employment measures of dispersal, its influence was seen to be high in Textiles (IN25), Chemicals (IN30), Beverages (IN22) and Paper (IN28).

Labor Productivity was regressed on employment dispersal measure (HHNW and CVNW), it showed high influence on Paper (IN28), NmMP (IN32), Machinery other than Transport (IN36), EGS (IN41). It showed weak influence on Wood (IN27) and RPC (IN30). But when L-productivity was regressed on NVA dispersal, higher influence was noticed in NmMP (IN32), RPC (IN30), Textiles (IN25), OMI (IN38) and Metal Products (IN34).

In 1966-75, TFP regressed on NVA dispersal measures showed higher influence in Textiles (IN25), EGS (IN41), RPC (IN31) and Chemicals (IN30) dispersal. TFP influence on employment dispersal was maximum in Food (IN21), Textiles (IN25), Chemicals (IN30), RPC (IN31) and EGS (IN41). When K/L was regressed on NVA in this recession period, higher influence was seen in Food (IN21), Textile Products (IN26), Beverages (IN22), Metal Products (IN34) and Basic Metals and Alloys (IN33). When K/L was regressed on employment, higher K/L influence was seen in Textiles (IN25), Machinery other than Transport (IN36) and EGS (IN41).

In 1966-75, the decadal period of recession, Non-metallic Mineral Products (IN32), Basic Metals and Alloys (IN33), Metal Prodcuts (IN34) and Machinery other than Transport (IN36) showed higher $(b/r)^2$ implying that in Capital Goods Industry and Intermediates with higher capital intensiveness, recession was a cause for low TFPG influence and not so high Employment Dispersal. Food was more concentrated and so high K/L influence could not bring about NVA dispersal in Food Industry. Thus recession affected not only the machine goods indsutry but also the main agro-industry in India. K/L growth did not influence NVA dispersal in Textiles (IN25) and Machinery other than Transport (IN36) but it did influecne employment dispersal in tehse indsutries despite recession. NVA of Intermedaites like Leatehr (IN29), Chemicals (IN30) and Rubber (IN31) dispersed due to Capital Productivity influence. While $(b/r)^2$ was relatively high, influence of Labor Productivity in this period of 1966-75, did not bring about disperal in Food Industry. Similarly, $(b/r)^2$ in Hhemp is realtively high in RPC (IN31) and despite low influence of Labor Prodcutivity on employment dispersal in terms of b^, L-productivity should be increased, as dispersal is due to influence of L-productivity, as revealed by high b/r.

When K-productivity was regressed on NVA, higher influence was seen in RPC, Leather, Beverages. Its influence on Employment dispersal was higher in RPC (IN31), Leather (IN29), EGS (IN41) and larger size could retain its share of employment. When L-productivity was regressed on NVA, high influence industries were EGS, Wood. L-productivity influence on employment saw high influence on Food and EGS. So influence of partial productivity of factors was high in User Based industries. EGS showing high influence of partial productivity of factor on growth variables showed this industry despite being K-intensive still showed characteristics of clay as much as putty and therefore amenable to greater decentralization. But as seen above, K/L influence on growth variables in EGS remains negligible.

In 1976-85, TFP influence on NVA dispersal was higher in Beverages (IN22), RPC (IN31), BM &A (IN33) and large regions retaining their hold. Similar dispersal occurred in employment in RPC (IN31), MotTr (IN36), Chemicals (IN30) and Textile products (IN26). K/L showed higher influence on NVA dispersal in RPC (IN31), Food (IN21), Metal Products (IN34), Paper (IN28) Wood (IN27) and BM & A (IN33) but dispersal occurred. Influence of K/L on employment dispersal was higher in Textiles (IN25), Leather (IN29), Food (IN21), EGS (IN41) and BM & A (IN33). But least influence of K/L on NVA was in EGS (IN41).

K-Productivity's influence on NVA is higher in OMI (IN38), RPC (IN31), BM &A (IN33) and Textile Products (IN26) showed concentration. Transport (IN37) showed least influence but showed the way to infrastructure development. On Employment dispersal, K-productivity showed high influence on Employment (NW) dispersal measures in Food (IN21), EGS (IN41), Paper (IN28) though Paper (IN28) showed more concentration in this period. Food (IN21) and Paper (IN28) benefited irrespective of regions. High influence of L-productivity on Employment (NW) dispersal noticed in Leather (IN29), and EGS (IN41).

In the final decade of our analysis i.e. in 1986-95, TFP showed higher influence on NVA dispersal of Metal Products (IN34), Transport (IN37), EGS (IN41) and Non Metallic Mineral Products (IN32) retaining their spread of NVA. TFP influence on Employment dispersal was higher in Non Metallic Mineral Products (IN33), Mot Tr (IN36), Food (IN21) and Leather (IN29). K/L influence on NVA dispersal in NmMP was high. Similar was the case in OMI (IN38) and RPC (IN31). Higher influence of K/L on employment was also seen in NmMP (IN32) and also in Food, Beverages, Wood and Textile Products (IN26). Wood showed concentration.

K-Productivity showed higher influences on NVA dispersal in EGS (IN41), OMI (IN38), Leather (IN29) and Chemicals (IN30). It was also encouraging that Leather (IN29), a

L-intensive industry showed higher Capital Productivity influence on dispersal of output growth in this period of liberalization. K-Productivity's Influence on Employment was higher in EGS (IN41), Chemicals (IN30) and Transport (IN37).

L-Productivity's influence on dispersal of NVA is higher in EGS, MotTR, Chemical (IN30) and RPC (IN31). L-Productivity influence on employment was higher in EGS (IN41), Wood (IN27), BM&A (IN33), Transport (IN37). High influence on EGS showed feasibility of decentralized power reforms. But high $(b /r)^2$ could not bring about much NVA dispersal in this last decade of analysis in Basci Metals and Alloys (IN33).

In the long-term period of 40years, TFP influence on employment dispersal and NVA dispersal was higher in NmMP, Metal Products, Textiles (IN25) and Leather (IN29), though mean values were nearer the lowest values in IN32 and IN34, though relatively, across industries, IN32 and IN34 gained better dispersal. Thus relatively, Intermediates did well but its values being nearer to lower dispersal values meant cause of lower dispersal is to be found in its growth and productivity figures as well as in lower influence in Lproductivity, Kproductivity, K/L, TFP on disperal measures. K/L influence is higher in Food (IN21), Leather (IN29), NmmP (IN32), BM &A (IN33), Paper (IN28) and Textile Products (IN26). In Chemicals (IN30), smaller regions benefited. K/L influence on employment dispersal was high on EGS (IN41), OMI (IN38), Leather (IN29), NmMP (IN32).

Capital Productivity influenced dispersal of NVA in Leather (IN29), EGS (IN41), OMI (IN38) and Beverages (IN22). Labor Productivity influence on NVA was higher in Leather (IN29), EGS (IN41), OMI (IN38) and Beverages (IN22).

Food, Wood, Paper, Textile Products and EGS need greater attention for more balanced regional dispersal of Indian Industries and economic growth. EGS showing great amenability to L-productivity influence, despite being a K-intensive industry and the rest being more L-intensive, it augurs well for Indian Industry and Economy if labor gets more disciplined, there is less of labor turnover and greater political trust along with incentives like productivity linked wage reforms and higher R&D output and productivity with highly dispersed institutional cum technological development.

Policy recommendations will be that if K/L or PK or FC importance is more and more in decades or long term, then more skill will be needed. So investment and focus must be towards more investment in R&D in industries, education, knowledge economy must be quickly brought to focus, with Electronics, software, hardware ICT and its spread to rural areas. Primary education especially in rural areas or for people below certain income level rather than reservations, must be an essential component of policy orientation change and implementation.

Wood (IN27) comes out as an industry needing attention at least for purposes of employment planning and to boost employment in this wood industry. This will boost rural entrepreneur-ship and rural employment and being L-intensive and can be used massively for poverty alleviation programme. Adequate marketing can boost tourism in service, housing and improve infrastructure and provide a base for industrial growth and trade.

In 1966-75, the decadal period of recession, Non-Metallic Mineral Products (In32), Basic Metals and Alloys (IN33), Metal Products (IN34), Machinery other than Transport (IN36) showed $(b /r)^2$ higher implying even in capital goods industry and intermediates with higher capital intensive-ness, recession was a cause for low TFPG influence and not so high Employment dispersal. Food was more concentrated and so high K/L influence could not bring about NVA dispersal of Food Industry. Thus recession not only affected the machine oriented goods industry, it also affected the main agro-industry in India too. K/L growth did not influence NVA dispersal in Textiles (IN25) and Machinery other than Transport (IN36) but it did influence employment dispersal in these industries despite recession. NVA of Intermediates like Leather (IN29) Chemicals (IN30) and Rubber (IN31) dispersed due to capital productivity influence. While $(b /r)^2$ is relatively high, influence of Labor productivity in this period of 1966-75, did not bring about dispersal in Food Industry, a point that reinforces the inference presented in this paragraph before. Similarly, $(b /r)^2$ in HH is relatively high in Rubber-petroleum and Coal (IN31) and despite low influence of Labor productivity on employment dispersal in terms of b^, policy recommendation is in terms of raising Labor Productivity, as dispersal is due to influence of Labor productivity. Labor productivity influence did not bring about employment dispersal in this Food (IN21), a fact that can be again attributed to recession.

Textile Products (26), Chemicals (IN30), Rubber-Petroleum-Coal (IN31) and Machinery other than Transport (IN36) with high b/r did not bring about high employment dispersal in this period of 1976-85.

In Rubber, Chemicals and Basic Metals, that are traditional highly capital intensive did show higher dispersal in this period of 1976-85 but it was again not due to influence of K/L.

In 1986-95, Food Industry still showed concentration. Dispersal being higher in Chemicals, high $(b/r)^2$ showed influence of Labor Productivity on NVA dispersal in this decade. In Basic Metals, high b /r could not bring about much NVA dispersal in this decade. Thus Intermediates have not shown dispersal despite its potential. Leather showed dispersal in last decade both in NVA and in employment due to influence of capital productivity.

The long run analysis of 40years from 1956-95 revealed certain interesting results. High NVA dispersal and high $(b/r)^2$ in Chemicals (IN30) means that low TFPG influence as revealed in b^, itself is a factor for dispersal in this industry. Chemicals Industry (IN30) to sustain itself as a leading industry for balanced industrial development will have to find ways to improve its TFPG.

Basic Metals and Alloys (IN33) and Metal products (IN34), both being capital intensive Intermediates showed high TFPG influencing dispersal, while NmMP (IN32) being of similar nature as IN33 and IN34 showed concentration or non- dispersal with little TFPG influence on employment dispersal. Thus employment dispersal in these intermediates having shown themselves amenable to higher TFPG, it is necessary that a more detailed input-output planning exercises involving Intermediates is called for. The Economic Reforms of 1990s has not taken Intermediates Planning into account that would have a factor for regional equity and growth in Indian economy.

The Salient points to conclude:

In Chapter 4, an Analysis of Returns to Scale over a long perio dof 40years, saw Increasing Returns to scale (IRS) in many industries like IN25, IN21, IN27, In28, IN30, IN32, IN34, IN36, IN37. But scale economies did not necessarily reflect grwoth in NVA, GVA or Employment. Scale Economies does get reflected in Factories Growth Rate and therefore are a cause of entry and exit of firms to industry. Factories showed higher dispersal in IKI group of Industries in Chapter 6, but less dispersal in other variables.

Wood (IN27) showed highest TFP in Domar and also showed higher Capital Productivity in both K1P and K2P (measures of capital productivity) and yet remained problematic with low GVA, NVA, Emp, FC, dispersal and in scale. Thus employment and investment and planning for regional spread of Wood (IN27) is needed.

Capital Productivity needed to be improved generally in IKI indusrties and Kgoods industries as also in Food (IN21).

In Food (IN21), Textiles (IN25) and Wood (IN27), NVA and GVA growth rates are low and to boost these industries, FC growth seems necessary.

Metal Products Industry (IN34) did well to raise its K-Productivity, but FC growth being low, capital injection needed to boost dispersal. Similar prescription is seen in Textiles Products (IN26). Factory growth rate in IN26 being low and also NW/Fact in IN26 being low, employment planning in an inter-regional framework is needed. FC boost needed in Wood (IN27) and Paper (IN28) too.

Capital Intensity is low in Wood (IN27), Beverages (IN22), Leather (IN29), RPC (IN31), Metal Products (IN34) and OMI (IN38). K/L gowth is high in Textiel Prodcuts (IN26), Food (IN21), Textiles (IN25), EGS (IN41), Chemicals (IN30), NmMP (IN32), Basic Metals and Alloys (IN33), Machinery other than Transport (IN36) and Transport Equipment (IN37).

Capital Intensity influenced TFP the most in Beverages (IN22), Textile Products (IN26) and Wood (IN27).

TFPG influenced NVA most in EGS (IN41), Textiles (IN25), MotTr (IN36), BM&A (IN33), Food (IN21). RPC, Metal Prodcuts and Leather, Transport showed high TFP influence on GVA. TFP influence on employment highest in IN34, IN36, IN22, IN30 and IN31.

Capital Productivity showed high influence on GVA in NmMP, Paper, Beverage, Leather, Food, Chemicals, RPC and OMI in that descending order. Kprodcutivity higher influence on NVA growth in IN22, IN29 and IN31. Kproductivity influence on employment higher in IN29, IN22, IN31 and IN 21.

As regards dispersal as seen in Chapter5, in long term of 40years, 1956-95, higher dispersal was in Beverages (IN22), Textiles (IN25) and Other Manufacturing Industries (IN38) as mean values are nearer higher dispersal values.

The Capital Intensive Intermediates of Chemicals (IN30), Rubber, Petroleum and Coal (IN31), Non-Metallic Mineral Products (IN32), Basic Metal and Alloys (IN33) and Metal Products (IN34) need greater planning and integration with Capital Goods Industry, especially in OMI (IN38) and Electrical and Non Electrical Machinery other than Transport (IN36), if industrial sector is to contribute more to GDP and enable it to increase its employment absorption capacity that could lead to greater regional equity in Indian Industry and act as a major and sustainable instrument for poverty alleviation to raise standard of living of rural and urban economy.

APPENDICES

APPENDIX A.3: NIC 1987

Appendix A.3 Showing NIC 1987

20+21—Manufacture of Food and Food Products + Inedible oils (315) + Manufacture of Other Food Products

22—Manufacture of Beverages, Tobacco and Related Products

23—Manufacture of Cotton Textiles

24—Manufacture of Wool, Silk and synthetic and Man-made Fibre Textiles

25—Manufacture of Jute, Hemp, Mesta and Coir and coir-products

26—Manufacture of Textile Products (including wearing apparel other than footwear) includes thread, cordage, ropes twines, Jute bags and other jute textiles, nec, umbrella raincoats, hats, padding, upholstering filling, plastic sheetings, mosquito nets oil cloth, tarpaulin, zari, etc

27—Manufacture of Wood and Wood products: Furnitures and Fixtures, bamboo, cane and cork.

28—Manufacture of Paper and paper products and printing publishing and allied industries, pulp products,

29—Manufacture of Leather and Leather products, Fur and Leather Substitutes (except repair)

30—Manufacture of Rubber, plastic, petroleum and coal products, LNG, Nuclear fuel, greases, lubricating oil,

31—Manufacture of Basic Chemicals and Chemical Products (except products of petroleum and coal), turpentine and resin, indigo, products of fermentation other than alcohol, fertilizers and pesticides, Mnf. of plastics in primary form and synthetic rubber, terylene except glass, detergents, cosmetics, shampoo, toilet preparations, drugs, medicines allied products, matches, explosives fire-works, hair dressings, artists colors, inks,, gases, acids, alkalies, and their salts, enriched uranium isotopes, etc (excluding heavy water), production of coal tar in coke ovens, coke oven products.

32—Manufacture of non metallic mineral products, manufacture of refractory products and structural clay products, glass and glass products, earthen and plaster products, non structural ceramic ware, cement, lime, plaster, mica products, stone dressing slate silica, mineral wool, chinaware, porcelain-ware, etc

33—Basic Metals and Alloys industries-re-rolling mills, cold rolling mills, zinc mnf, metal casting,

34—Manufacture of Metal Products and parts, except machinery and transport equipment, drums, safe vaults, hurricane lanterns, stoves, keg pail, hand tools, weights and measures, utensils, oil-pressure lamps, powder metallurgy, weights and measures, tyre-founding,

35—Manufacture of Machinery and Machine tools and parts, Electrical Machinery, conveyors, Boilers, Industrial machinery for food and textile and other than food and textiles, office accounting machinery, laundry, excluding arms and armaments, fire fighting machinery, nuclear reactors, steam generating plants,

36—Manufacture of Electrical machinery, apparatus, appliances, and parts, generators, insulated wires and cables, dry and wet batteries, sockets, vacuum cleaners except repairing fans, TV, tapes, etc, X-ray apparatus, manf of computer based systems, electronic valves, etc.

37—Mnf of transport equipment and parts, Ship and ship building and repairing, rail road equipment, coach works, Bicycles, etc

38—Other manufacturing industries, medical surgical and scientific equipment, optical glass, photographic and optical goods excluding photochemical sensitized paper, minting of coins, Mnf of musical instruments, brooms, mnf. of umbrellas, ivory goods, jewelry, feather plumes, artificial flowers, fountain pens, tags, solar cells, cookers, watches and clocks, solar cells etc.

40- Generation transmission and distribution of electrical energy

41- Gas and steam generation and Distribution through pipes.

APPENDIX B:

Tables of Growth Rates Estimations with t, F R^2 and Degrees of Freedom

Table: B.4.1

Growth Rates of Variables and Structural Ratios in each 2-digit Industry

For the period 1956-95

	Indus/var		Fact	FC	NW	GVA	NVA	K1P	K2P
yr=40	21	$\hat{\beta}$	0.631	0.097	0.147	0.132	0.126	*0.035*	*0.029*
df=38	1956	t-test	10.160	6.345	7.072	9.968	32.383	1.543	1.912
		R^2	0.731	0.515	0.568	0.723	0.965	0.059	0.088
		F-test	103.297	40.262	50.014	99.359	1048.000	2.381	3.657
	22		0.126	0.107	0.071	0.164	0.159	0.058	0.053
yr=40	1956	t-test	12.713	3.795	5.361	18.403	17.107	2.254	2.120
df=38		R2	0.810	0.275	0.431	0.899	0.885	0.118	0.106
		F-test	161.612	14.403	28.742	338.665	292.635	5.078	4.495
	25		0.175	0.101	0.023	0.118	0.101	0.028	0.006
yr=40	1956	t-test	12.568	7.234	0.385	37.002	37.538	1.274	0.044
df=38		R2	0.806	0.579	0.039	0.973	0.974	0.041	0.005
		F-test	157.950	52.337	0.148	1369.170	1409.111	1.624	0.020
	26		0.077	0.076	0.051	0.165	0.172	0.089	0.096
yr=37	1959	t-test	6.744	2.216	5.945	18.656	32.641	2.820	2.950
df=35		R2	0.565	0.123	0.502	0.909	0.968	0.185	0.199
		F-test	45.476	4.912	35.338	348.057	1065.448	7.953	8.702
yr=38	27		0.092	0.044	0.022	0.129	0.111	0.086	0.067
df=36	1958	t-test	8.440	1.376	2.606	30.454	20.881	2.740	2.218
		R2	0.664	0.049	0.159	0.962	0.924	0.173	0.122
		F-test	71.228	1.894	6.791	927.471	436.022	7.506	4.920
yr=40	28		0.101	0.104	0.038	0.153	0.133	0.048	0.029
df=38	1956	t-test	10.356	5.972	6.213	25.217	43.075	2.859	1.736
		R2	0.738	0.484	0.504	0.944	0.979	0.177	0.073
		F-test	107.248	35.664	38.596	635.810	1855.444	8.175	3.012
	29		0.192	0.114	0.069	0.181	0.171	0.065	0.056
yr=40	1956	t-test	13.054	3.306	24.246	19.513	22.139	1.781	1.473
df=38		R2	0.817	0.223	0.939	909.000	0.928	0.077	0.054
		F-test	170.395	10.928	587.861	380.738	490.114	3.170	2.169
	30		0.092	0.124	0.038	0.163	0.132	0.039	0.008
yr=40	1956	t-test	20.199	7.641	7.088	22.691	13.254	2.257	0.483
df=38		R2	0.914	0.606	0.569	0.931	0.822	0.118	0.006
		F-test	408.017	58.389	50.242	514.899	175.657	5.095	0.233
	31		0.145	0.109	0.077	0.182	0.159	0.073	0.049
	1959	t-test	11.024	5.921	6.236	14.788	10.978	3.869	2.502
yr=37		R2	0.776	0.501	0.526	0.862	0.775	0.299	0.152
df=35		F-test	121.522	35.059	38.884	218.675	120.516	14.969	6.261
	32		0.104	0.112	0.043	0.148	0.132	0.037	0.019
	1956	t-test	16.462	6.001	14.885	24.352	15.740	1.996	1.011
yr=40		R2	0.877	0.486	0.854	0.939	0.867	0.089	0.089
df=38		F-test	271.008	36.017	221.555	593.018	247.737	3.747	3.747
			Fact	FC	NW	GVA	NVA	K1P	K2P

	33		0.087	0.127	0.039	0.152	0.137	0.024	0.011
	1956	t-test	13.495	9.955	13.790	28.973	43.015	1.937	0.851
yr=40		R2	0.827	0.723	0.833	0.956	0.979	0.089	0.018
df=38		F-test	182.111	99.101	190.159	839.435	1850.271	3.753	0.724
	34		0.189	0.083	0.031	0.153	0.137	0.071	0.054
yr=37	1959	t-test	8.531	3.302	7.379	22.137	55.910	2.870	2.164
df=35		R2	0.675	0.237	0.609	0.933	0.988	0.191	0.117
		F-test	72.781	10.905	54.454	490.042	3125.969	8.236	4.681
	36		0.079	0.118	0.039	0.164	0.149	0.047	0.031
	1956	t-test	10.348	8.169	12.899	75.562	53.766	3.138	2.071
yr=40		R2	0.738	0.637	0.814	0.993	0.987	0.205	0.101
df=38		F-test	107.075	66.727	166.380	5709.583	2890.749	9.845	4.280
	37		0.094	0.104	0.043	0.156	0.149	0.052	0.046
	1956	t-test	15.781	4.914	4.480	18.562	21.290	3.315	2.571
yr=40		R2	0.868	0.389	0.345	0.901	0.923	0.224	0.148
df=38		F-test	249.033	24.151	20.071	344.560	453.272	10.992	6.609
	38		0.058	0.051	0.018	0.149	0.141	0.098	0.089
yr=37	1959	t-test	5.853	1.725	0.840	35.872	39.985	3.319	2.995
df=35		R2	0.495	0.078	0.119	0.974	0.978	0.239	0.204
		F-test	34.258	2.975	1.705	1286.825	1598.827	11.012	8.969
	41		0.012	0.144	0.067	0.180	0.181	0.035	0.035
yr=37	1959	t-test	1.485	12.358	9.510	25.573	34.276	2.715	2.895
df=35		R2	0.059	0.814	0.721	0.949	0.971	0.173	0.193
		F-test	2.200	152.712	90.453	653.999	1174.843	7.370	8.380
			Fact	FC	NW	GVA	NVA	K1P	K2P

Table: B.4.2

Growth Rates of Variables and Structural Ratios in each 2-digit Industry

For the period 1956-95

L2P	L4P	KI2	KF	O1F	O2F	Indus		df
0.902	0.098	0.063	0.035	0.069	0.063	21	$\hat{\beta}$	yr=40
13.758	7.197	3.853	1.810	5.243	7.105		t-test	df=38
0.833	0.577	0.281	0.079	0.419	0.571		R^2	
189.269	51.790	14.848	3.275	27.493	50.475		F-test	
0.089	0.094	0.036	0.019	0.037	0.033	22		
8.620	12.317	1.485	0.697	4.289	3.623		t-test	yr=40
0.662	0.799	0.054	0.012	0.326	0.246		R2	df=38
74.307	151.701	2.204	0.486	18.392	12.411		F-test	
0.097	0.116	0.098	0.026	0.044	0.027	25		
15.082	17.100	6.568	1.611	6.703	4.547		t-test	yr=40
0.856	0.885	0.532	0.064	0.542	0.952		R2	df=38
227.477	292.401	43.141	2.595	44.975	20.673		F-test	
0.122	0.115	0.085	0.007	0.088	0.095	26		
17.102	13.803	2.740	0.022	9.144	9.174		t-test	yr=37
0.893	0.844	0.172	0.001	0.704	0.706		R2	df=35
292.471	190.513	7.506	0.005	83.613	84.164		F-test	
0.089	0.108	0.022	0.048	0.037	0.019	27		yr=38
10.751	15.934	0.689	0.411	4.530	1.922		t-test	df=36
0.762	0.875	0.013	0.052	0.363	0.093		R2	
115.592	259.895	0.475	1.990	20.539	3.695		F-test	
0.095	0.115	0.065	0.003	0.052	0.032	28		yr=40
20.613	13.535	3.923	0.153	4.204	3.330		t-test	df=38

0.917	0.828	0.288	0.006	0.317	0.226		R2	
424.896	193.196	15.389	0.235	17.671	11.088		F-test	
0.101	0.111	0.045	0.023	0.088	0.078	29		
13.714	12.820	1.323	0.618	9.057	9.926		t-test	yr=40
0.832	0.812	0.044	0.010	0.683	0.721		R2	df=38
188.072	164.349	1.750	0.382	82.027	98.533		F-test	
0.094	0.125	0.086	0.032	0.072	0.041	30		
10.711	15.048	6.086	1.849	8.188	3.551		t-test	yr=40
0.751	0.856	0.494	0.082	0.638	0.249		R2	df=38
114.727	226.447	37.043	3.420	67.039	12.613		F-test	
0.081	0.104	0.032	0.035	0.037	0.014	31		
6.242	9.401	1.848	0.771	3.424	1.136		t-test	
0.527	0.716	0.088	0.082	0.251	0.035		R2	yr=37
38.956	88.384	3.416	3.138	11.721	1.280		F-test	df=35
0.088	0.105	0.068	0.007	0.044	0.027	32		
10.410	17.100	9.660	0.375	5.319	2.640		t-test	
0.740	0.885	0.261	0.003	0.426	0.154		R2	yr=40
108.360	292.417	13.393	0.141	28.297	6.969		F-test	df=38
L2P	L4P	KI2	KF	O1F	O2F			
0.099	0.113	0.087	0.039	0.064	0.051	33		
21.519	20.324	7.104	2.638	8.103	6.511		t-test	
0.924	0.915	0.571	0.154	0.633	0.527		R2	yr=40
463.047	413.065	50.466	6.960	65.662	42.367		F-test	df=38
0.106	0.123	0.052	0.005	0.064	0.048	34		
29.085	19.989	2.167	0.184	6.755	5.157		t-test	yr=37
0.961	0.919	0.118	0.010	0.565	0.431		R2	df=35
845.941	399.578	4.696	0.030	45.634	26.593		F-test	
0.110	0.125	0.078	0.038	0.084	0.069	36		
30.310	43.390	5.341	2.100	13.746	9.064		t-test	
0.961	0.980	0.428	0.103	0.833	0.709		R2	yr=40
918.980	188.690	28.528	4.410	188.950	92.627		F-test	df=38
0.105	0.113	0.061	0.009	0.062	0.055	37		
27.815	20.091	3.402	0.479	7.277	8.464		t-test	
0.953	0.913	0.233	0.006	0.582	0.653		R2	yr=40
773.684	403.630	11.571	0.229	52.947	71.645		F-test	df=38
0.191	0.141	0.042	0.007	0.091	0.082	38	B^	
11.633	11.828	1.484	0.189	8.012	7.462		t-test	yr=37
0.794	0.799	0.059	0.001	0.647	0.614		R2	df=35
135.316	139.895	2.201	0.035	64.195	55.676		F-test	
0.114	0.114	0.078	0.133	0.168	0.168	41	B^	
16.576	13.754	6.406	9.903	17.622	19.427		t-test	yr=37
0.887	0.643	0.539	0.733	0.898	0.915		R2	df=35
274.764	189.184	41.035	96.104	310.521	377.399		F-test	
L2P	L4P	KI2	KF	O1F	O2F			

Table: B.4.3.

Estimates of Aggregate (All Industry) Growth Rates of Variables and Structural Ratios along with its t, F and R^2 Figures

Var	$\hat{\beta}$	t-value	R^2	F-test
Fact	0.081	15.016	0.8558	225.47
FC	0.153	30.097	0.959	905.8
NVA	0.993	5575.2	0.139	74.164
GVA	0.15	117.31	0.997	1360
K1P	0.003	0.266	0.011	0.387
K2P	0.014	0.585	0.149	6.682
KF	0.073	9.488	0.703	90.017
KI2	0.121	23.521	0.936	952.71
L2P	0.108	42.283	0.979	1798.8
L4P	0.118	50.579	0.985	2448.3
WF	0.048	0.925	0.759	119.75
NW	0.032	14.131	0.84	198.93
O2F	0.735	105.35	0.059	10.066
O1F	0.812	164.12	0.069	12.811

Table: B.4.4.

Values of Coefficients of Cobb-Douglas Production Function (Output Elasticities of Factors) with t, F and R^2 and Returns to Scale Values for 1956-95

	a	t-value(a)	b	t-value(b)	R-square	a+b	RS
20+21	0.375	1.708	0.911	10.658	0.883	1.286	irs
22	0.255	5.836	0.855	29.69	0.985	1.11	crs
25	1.036	3.982	0.844	31.737	0.973	1.88	irs
26	0.291	1.136	0.866	8.19	0.953	1.157	crs
27	0.375	4.991	0.864	34.276	0.987	1.239	irs
28	0.0811	0.65	0.977	22.13	0.977	1.0581	crs
29	0.359	2.146	0.764	12.08	0.991	1.123	crs
30	0.94	2.284	0.837	7.15	0.829	1.777	irs
31	0.164	1.018	0.644	5.697	0.855	0.808	crs
32	1.108	3.218	0.538	5.213	0.865	1.646	irs
33	0.17	0.308	0.4	1.864	0.928	0.57	drs
34	0.46	2.747	0.849	19.044	0.983	1.309	irs
35+36	0.487	2.247	0.859	13.441	0.97	1.346	irs
37	0.284	2.66	0.956	22.458	0.981	1.24	irs
38	0.231	0.756	0.969	14.543	0.97	1.2	irs
40+41	0.353	1.49	0.844	7.538	0.908	1.197	crs

Table:B.4.5 Growth in TFP in Response to K/L
(at current price 1956-95

	Ind	b^	R2	t	F	df
Food	21	8.613	0.791	11.679	136.398	37
Beverage	22	24.861	0.767	10.723	114.976	36
Textile	25	10.575	0.742	9.891	9.78E+01	35
tex prd	26	12.461	0.816	11.916	142	33
wood	27	11.22	0.778	10.409	1.08E+02	32
Paper	28	3.778	0.763	10.314	106.328	34
Leather	29	10.549	0.732	9.78	95.654	36
Chemical	30	2.288	0.686	8.865	78.583	37
RPC	31	1.75	0.885	15.678	245.806	33
NmMP	32	2.927	0.667	8.5	72.256	37
BM&A	33	1.102	0.723	9.415	88.65	35
Met.Prd	34	6.097	0.772	0.879	111.594	34
MotTr	36	3.704	0.749	10.665	113.52	39
Tr.Eq	37	3.941	0.778	10.428	108.74	32
OMI	38	4.879	0.72	8.93	79.25	32
EGS	41	4.45	0.799	10.545	111.11	29

Table: B.4.6:

Growth in Industries' output(NVA) in response to TFP of Solow
(at current prices)1956-95-96

Ind	b^	R2	t	F	df
21	2.354	0.996	100.073	10014.62	37
22	2.138	0.994	78.76	6203.14	36
25	2.484	0.998	137.12	18800.92	35
26	1.846	0.996	85.68	7340.98	32
27	1.846	0.996	85.68	7340.98	32
28	2.215	0.997	99.8	1054	34
29	1.773	0.988	99.4	2970.4	36
30	2.351	0.996	91.986	8461.49	37
31	2.433	0.994	70.563	4979.65	33
32	2.24	0.994	80.03	6405.04	37
33	2.436	0.996	92.984	8646.06	35
34	2.179	0.996	88.784	7882.6	34
36	2.466	0.995	90.18	8132.45	39
37	2.335	0.997	94.604	8951.74	32
38	1.977	0.995	79.77	6363.23	32
41	2.557	0.996	82.543	6873.38	29

Table:B.4.7:

Growth in Industries' output(GVA)in response to capital intensity

(at current prices)1956-95

Ind	b^	R2	t	F	df
21	0.991	0.883	16.938	286.887	39
22	1.051	0.948	26.405	697.229	39
25	0.925	0.832	13.719	188.224	39
26	1.296	0.972	34.24	117.361	37
27	0.821	0.946	24.793	614.715	36
28	0.982	0.674	8.868	78.648	39
29	1.272	0.95	26.971	727.459	39
30	0.682	0.367	2.795	7.814	39
31	0.556	0.37	1.641	2.893	37
32	1.001	0.98	43.919	19.849	37
33	0.547	0.348	2.563	6.265	36
34	0.475	0.992	44.199	195.551	35
36	1.128	0.986	46.872	218.99	33
37	1.229	0.953	28.104	789.815	39

38	1.255	0.965	31.311	980.361	37
41	1.346	0.914	19.531	381.472	37

Table: B.4.8

Growth in Industries' output(GVA) in response to TFP by Solow

(at current prices)1956-95

Ind	b^	R2	t	F	df
21	0.528	0.021	0.899	0.807	39
22	1.816	0.945	5.524	10.513	35
25	0.426	0.253	1.46	2.13	35
26	0.357	0.299	0.719	0.717	36
27	0.118	0.559	6.654	14.278	31
28	0.526	0.419	4.732	9.284	32
29	0.806	0.578	6.51	4.384	31
30	0.45	0.745	0.919	1.538	33
31	0.579	0.766	1.081	16.116	35
32	0.462	0.125	0.996	0.991	39
33	0.434	0.529	0.374	4.408	33
34	1.914	0.865	14.989	24.866	30
36	0.768	0.69	7.732	17.241	36
37	0.626	0.316	0.682	1.485	33
38	1.576	0.674	4.299	7.232	36
41	0.519	0.314	0.199	1.01	36

Table: B.4.9

Growth in Industries' output(GVA) in response to capital productivity
(at current prices) 1956-95

Ind	b^	R2	t	F	df
21	0.803	0.521	6.43	41.347	39
22	1.135	0.607	5.151	9.93	35
25	0.476	0.617	8.163	10.582	34
26	0.266	0.097	0.482	0.533	34
27	0.067	0.012	0.626	0.392	33
28	1.581	0.373	1.633	2.688	35
29	0.971	0.598	0.796	1.593	35
30	0.768	0.637	6.276	39.393	35
31	0.559	0.514	0.653	1.427	31
32	1.64	0.437	1.155	1.335	36
33	0.18	0.704	0.37	0.837	33
34	0.318	0.311	1.174	1.031	35
36	0.44	0.321	0.554	1.125	35
37	0.315	0.315	1.148	1.36	36
38	0.557	0.221	0.452	1.058	30
41	0.041	0.411	0.521	1.135	30

Table: B.4.10

Growth in Industries' output(GVA) in response to Labor Productivity
(at current prices)1956-95

Ind	b^	R2	t	F	df
21	0.756	0.659	8.579	73.596	39
22	1.197	0.904	18.965	359.688	35
25	1.086	0.944	23.649	589.291	34
26	1.221	0.927	46.716	20.414	34
27	1.026	0.966	30.15	909.045	33
28	1.158	0.988	52.815	274.735	35
29	1.15	0.944	23.611	557.496	34
30	0.989	0.574	5.532	30.6	35
31	0.661	0.535	4.835	23.373	31
32	1.06	0.987	52.584	275.104	37
33	1.078	0.975	38.667	145.099	38
34	1.203	0.989	55.235	350.22	35
36	1.107	0.985	50.601	250.46	38
37	1.261	0.917	20.547	422.19	39
38	1.331	0.917	18.512	342.697	32
41	1.246	0.965	29.905	894.293	33

Table: B.4.11

Growth in Industries'output(NVA) in response to TFP by Solow

(at current prices)1956-95

Ind	b^	R2	t	F	df
21	0.577	0.023	0.937	0.877	39
22	1.294	0.475	4.669	9.448	34
25	1.135	0.371	2.362	5.327	35
26	0.499	0.014	0.362	0.831	34
27	0.553	0.35	3.051	9.309	32
28	1.438	0.242	2.298	5.28	32
29	1.751	0.031	1.168	1.028	30
30	0.704	0.416	1.699	4.488	33
31	0.784	0.202	1.817	3.302	30
32	0.551	0.029	1.013	1.027	37
33	0.418	0.201	0.643	1.02	29
34	0.728	0.017	0.503	1.494	30
36	0.755	0.646	1.552	4.409	36
37	1.16	0.939	24.205	588.281	39
38	1.846	0.182	5.05	17.102	36
41	0.783	0.276	1.439	2.07	26

Table: B.4.12

Growth in Industries' output(NVA)in response to capital intensity

(at current prices)1956-95-96

Ind	b^	R2	t	F	df
21	1.002	0.915	18.535	343.56	33
22	1.077	0.924	19.973	398.966	34
25	0.792	0.949	14.414	207.754	38
26	1.32	0.941	18.329	335.938	33
27	0.854	0.953	24.27	589.035	30
28	0.767	0.58	5.346	28.575	32
29	1.346	0.914	18.396	338.43	33
30	0.63	0.638	7.268	52.817	31
31	0.565	0.398	3.508	12.308	30
32	0.927	0.92	20.042	401.683	36
33	1.03	0.954	28.86	832.892	39
34	0.871	0.965	28.655	821.083	31
36	1.059	0.972	31.565	996.354	30
37	1.16	0.939	24.255	588.287	39
38	1.088	0.938	22.089	487.939	35
41	1.19	0.977	36.382	133.629	32

Table: B.4.13

Growth in Industries' output(NVA) in response to labor productivity (at current prices)1956-95

Ind	b^	R2	t	F	df
21	0.855	0.763	11.076	122.667	39
22	1.284	0.972	36.222	131.216	37
25	0.969	0.993	70.977	502.726	37
26	1.372	0.921	18.711	350.105	31
27	1.025	0.957	26.12	684.355	33
28	1.157	0.987	53.265	283.134	37
29	1.248	0.987	51.32	263.735	35
30	0.739	0.584	5.479	30.015	33
31	1.727	0.993	63.018	391.253	33
32	1.034	0.998	157.042	246.62	35
33	1.12	0.993	72.361	526.15	37
34	1.166	0.988	52.99	280.73	34
36	1.129	0.995	79.925	638.081	33
37	1.189	0.894	16.686	278.407	34
38	1.263	0.962	28.479	811.031	33
41	1.168	0.981	40.997	160.334	33

Table: B.4.14

Growth in Industries' output(NVA)in response to capital productivity
(at current prices)1956-95

Ind	b^	R2	t	F	df
21	0.87	0.553	6.84	47.066	39
22	1.511	0.552	1.607	6.797	37
25	0.232	0.032	0.419	0.252	35
26	0.293	0.096	0.441	0.295	34
27	0.079	0.086	1.41	0.094	32
28	0.972	0.339	1.218	1.482	38
29	1.275	0.577	0.78	1.778	33
30	0.75	0.55	4.425	19.581	33
31	1.162	0.891	11.658	135.909	31
32	0.32	0.088	0.523	74.62	33
33	0.482	0.025	0.377	0.955	34
34	0.834	0.194	0.626	4.392	31
36	0.064	0.2	0.218	2.107	30
37	0.065	0.224	0.39	0.864	33
38	0.686	0.229	0.616	1.216	33

41	0.048	0.011	0.186	0.235	30

Table: B.4.15

Growth in Industries' employment(nw)in reponse to capital intensity (at current prices)1956-95

Ind	b^	R2	t	F	df
21	0.224	0.372	2.511	6.304	39
22	0.418	0.419	3.767	10.671	39
25	0.041	0.122	0.486	1.282	35
26	0.656	0.998	18.584	345.355	36
27	0.055	0.292	1.861	4.463	35
28	0.349	0.508	4.115	16.935	39
29	0.501	0.764	9.693	93.958	30
30	0.229	0.24	2.488	6.123	39
31	0.646	0.398	3.856	14.868	36
32	0.386	0.53	5.358	28.711	39
33	0.264	0.492	4.946	24.466	39
34	0.353	0.545	3.913	15.308	30
36	0.149	0.972	4.95	24.499	32
37	1.161	0.537	4.4	19.357	39
38	0.412	0.802	11.907	141.78	36
41	0.515	0.626	6.235	38.881	35

Table: B.4.16

Growth in Industries' employment(nw)in response to TFPby Solow
(at current prices)1956-95-96

Ind	b^	R2	t	F	df
21	1.249	0.24	0.57	1.525	33
22	1.372	0.735	2.393	5.726	39
25	0.241	0.132	0.202	0.81	35
26	0.553	0.977	17.842	320.718	34
27	0.092	0.432	5.223	7.05	31
28	0.145	0.815	12.5	148.9	36
29	0.583	0.115	0.314	0.313	30
30	1.309	0.323	0.873	0.713	33
31	1.047	0.109	0.545	1.597	31
32	0.374	0.023	0.918	0.842	37
33	0.106	0.61	0.562	0.416	32
34	1.612	0.047	0.187	1.614	28
36	1.425	0.78	0.787	0.62	29
37	0.361	0.437	4.4	19.359	39
38	0.739	0.754	0.808	0.653	36
41	0.682	0.112	0.556	1.309	28

Table: B.4.17

Growth in Industries employment(nw) in response to labor productivty
(at current prices)1956-95-96

Ind	b^	R2	t	F	df
21	0.318	0.351	3.426	11.739	36
22	0.361	0.36	3.368	11.345	39
25	0.013	0.216	0.784	0.614	38
26	0.648	0.93	21.283	452.953	35
27	0.072	0.299	1.937	3.751	35
28	0.352	0.55	4.423	19.562	39
29	0.697	0.797	12.043	145.042	38
30	0.378	0.371	3.712	13.782	38
31	0.483	0.557	5.319	28.287	36
32	0.396	0.584	5.5	30.248	36
33	0.283	0.536	5.332	28.429	38
34	0.288	0.621	6.175	38.137	36
36	0.309	0.579	5.83	33.985	38
37	0.166	0.332	4.228	17.872	37
38	0.324	0.775	10.97	12.349	36
41	0.379	0.517	6.031	36.378	35

Table: B.4.18

Growth in Industries'employment(nw)in response to capital productivity
(at current prices)1956-95

Ind	b^	R^2	t	F	df
21	0.396	0.258	3.447	11.623	35
22	0.924	0.202	2.506	9.689	38
25	0.318	0.331	2.396	5.74	37
26	0.063	0.02	0.352	1.063	35
27	0.098	0.235	1.045	1.093	37
28	0.383	0.328	1.048	1.098	39
29	1.375	0.511	5.084	25.842	33
30	0.316	0.413	3.162	9.995	38
31	0.477	0.479	3.676	13.514	36
32	0.373	0.241	1.218	9.484	39
33	0.281	0.448	3.534	12.489	35
34	0.079	0.013	0.349	0.121	34
36	0.33	0.213	0.71	1.504	37
37	0.058	0.302	1.946	1.567	37
38	0.096	0.335	0.38	0.245	37
41	0.058	0.114	0.7	0.59	36

Notes: * textiles includes cotton textiles(23), wool and silk textiles(24) and jute textiles(25)- from NIC1987 NIC 1987- Source: Central Statistical Organization-Annual Survey of Industries(Summary Reports of Factory Sector-1987) For All the Above Tables in this Appendix B.

APPENDIX C:

Tables Containing all HH and CV Values for All States and UT, Large States and Small States and UT for each year and for each2-digit Industry:

Table: C.5.1: 10-Yearly H.H. Results for Smaller States for 1959-65

		59-60	60-61	61-62	62-63	63-64	64-65	65-66
20+21	Units			0.5011			0.5011	0.3359
	Prod K			0.8397			0.8034	0.7185
	Emp			0.5824			0.8104	0.4695
	K/L			0.8397			0.8034	0.9369
	NVA			0.8475			0.8880	0.8156
25	Units				0.5740	0.5848	0.5450	0.5848
	Prod K	0.90147			0.8680	0.6888	0.5536	0.6390
	Emp				0.8684	0.5733	0.5776	0.6060
	K/L				0.5000	0.6888	0.5029	0.5039
	NVA				0.9273	0.7072	0.6785	0.6670
27	Units	0.5	0.8	0.8	0.8	0.8	0.8	0.5800
	Prod K	0.53303	0.8	0.8	0.8	0.8	0.8	0.6416
	Emp	0.50735	0.8	0.8	0.8	0.8	0.8	0.5205
	K/L	0.50005	0.8	0.8	0.8	0.8	0.8	0.5682
	NVA	0.60817	0.8	0.8	0.8	0.8	0.8	0.6071
34	Units	0.8	0.8	0.8	0.8	0.7551	0.8145	0.8301
	Prod K	0.50001	0.8	0.8	0.8	0.8353	0.8390	0.8495
	Emp	0.8	0.8	0.8	0.8	0.8349	0.9190	0.9122
	K/L	0.8	0.8	0.8	0.8	0.5000	0.5699	0.8495
	NVA	0.8	0.8	0.8	0.8	0.8699	0.9324	0.9319
37	Units	0.8					0.6597	0.6597
	Prod K	0.7912					0.6193	0.6178
	Emp	0.8					0.6504	0.6516
	K/L	0.8					0.5034	0.5040
	NVA	0.8					0.8155	0.7455

Table: C.5.2: 10-Yearly H.H. Results for Smaller States and UT for 1966-75

		66-67	67-68	68-69	69-70	70-71	73-74	74-75
20+21	Units	0.5283	0.5740	0.5408	0.4221	0.5200	0.4280	0.4959
	Prod K	0.6418	0.6500	0.8945	0.6014	0.7992	0.6211	0.5068
	Emp	0.5675	0.5184	0.6675	0.5430	0.6236	0.7188	0.4197
	K/L	0.5211	0.5790	0.7028	0.3421	0.6009	0.8700	0.1629
	NVA	0.9118	0.8174	0.9448	0.9069	0.9143	0.7307	0.7028
25	Units	0.5848	0.5679	0.5918		0.5766		0.8389
	Prod K	0.5291	0.5637	0.6225		0.5103		0.7220
	Emp	0.5881	0.5714	0.5842		0.5887		0.1744
	K/L	0.5198	0.5003	0.5057		0.5437		0.7436
	NVA	0.6741	0.6573	0.6770		0.7048		0.9767
27	Units	0.6250	0.5041	0.5062	0.6543	0.6033	0.5918	0.6444
	Prod K	0.5207	0.5080	0.8922	0.5379	0.8491	0.5543	0.4280
	Emp	0.5346	0.5005	0.8089	0.5197	0.7286	0.5000	0.4316
	K/L	0.5020	0.5122	0.5539	0.5033	0.5671	0.5559	0.1612
	NVA	0.8220	0.5891	0.5307	0.5592	0.5798	0.5099	0.6786
28	Units						0.5313	0.3148
	Prod K						0.5000	0.5831
	Emp						0.5000	0.5137
	K/L						0.5001	0.2418
	NVA						0.5195	0.7300
30	Units						0.5000	0.7707
	Prod K						0.5000	0.5922
	Emp						0.5000	0.8082
	K/L						0.5000	0.4858
	NVA						0.5000	0.5010
31	Units						0.6401	0.5034
	Prod K						0.9903	0.5876
	Emp						0.8665	0.6566
	K/L						0.8877	0.6539
	NVA						0.9558	0.3885
32	Units						0.6250	0.6819
	Prod K						0.5626	0.9517
	Emp						0.5117	0.8757
	K/L						0.5225	0.4163
	NVA						0.5505	0.9212
34	Units	0.6860	0.8301	0.8			0.8	0.6612
	Prod K	0.8261	0.8708	0.8			0.8	0.8568
	Emp	0.7677	0.7797	0.8			0.8	0.7485
	K/L	0.3462	0.5506	0.8			0.8	0.2550
	NVA	0.8632	0.8573	0.8			0.8	0.8551
35+36	Units	0.8828	0.8			0.8	0.5641	0.7134
	Prod K	0.6937	0.8			0.8	0.8305	0.9495
	Emp	0.8907	0.8			0.8	0.5639	0.9392
	K/L	0.6690	0.8			0.8	0.4860	0.3508
	NVA	0.6788	0.8			0.8	0.8328	0.9465
37	Units	0.6159	0.7055	0.6633	0.6361	0.6664	0.3640	0.5317
	Prod K	0.5929	0.5953	0.5114	0.5152	0.6150	0.8425	0.7723

	Emp	0.6140	0.6553	0.5735	0.5348	0.5970	0.6900	0.8199
	K/L	0.5017	0.5127	0.5114	0.5877	0.5012	0.6533	0.2568
	NVA	0.7425	0.6888	0.5582	0.5014	0.7845	0.5880	0.8993
41	Units			0.5200	0.5200		0.5800	
	Prod K			0.5339	0.5102		0.9980	
	Emp			0.7034	0.6826		0.9650	
	K/L			0.7966	0.7364		0.9015	
	NVA			0.5938	0.9819		0.9949	

Table: C.5.3: 10-Yearly H.H. Results for 12 Small States for 1976-85

		76-77	77-78	79-80	80-81	81-82	82-83	83-84	84-85
20+21	Units	0.3193	0.3257	0.3153	0.2740	0.3032	0.2746	0.3787	0.2717
	Prod K	0.5708	0.5051	0.6145	0.5197	0.5512	0.6172	0.6714	0.6159
	Emp	0.3369	0.3120	0.3573	0.3138	0.3491	0.3461	0.4557	0.3605
	K/L	0.1775	0.1744	0.2586	0.1773	0.1774	0.1926	0.1916	0.2069
	NVA	0.3144	0.4749	0.7122	0.5262	0.5133	0.5740	0.4131	0.7457
22	Units	0.3856	0.3262	0.5092	0.2871	0.4828	0.4671	0.4043	0.2320
	Prod K	0.3430	0.4482	0.3481	0.3581	0.2891	0.2817	0.3275	0.2765
	Emp	0.5434	0.5375	0.3459	0.4680	0.4115	0.3358	0.4561	0.3234
	K/L	0.4762	0.3958	0.3807	0.3955	0.3623	0.3155	0.3510	0.2740
	NVA	0.8162	0.6298	0.5380	0.4069	0.4145	0.5085	0.3591	0.4467
23	Units	0.4419	0.5556	0.5752	0.5299	0.3944	0.4311	0.5277	0.5061
	Prod K	0.4564	0.5411	0.5000	0.3787	0.5078	0.5141	0.6269	0.5861
	Emp	0.5205	0.5193	0.5211	0.4936	0.4998	0.5029	0.6624	0.5686
	K/L	0.4806	0.5046	0.5221	0.7131	0.2825	0.3113	0.5043	0.3502
	NVA	0.9916	0.5232	0.5057	0.3412	0.5777	0.4770	0.5831	0.4730
24	Units	0.8510	0.6897	0.4294	0.5326	0.6401	0.5433	0.6866	0.8025
	Prod K	0.5248	0.5527	0.6992	0.4310	0.4067	0.4313	0.6299	0.5263
	Emp	0.5837	0.5490	0.6024	0.4506	0.4764	0.5039	0.5219	0.5818
	K/L	0.5210	0.3894	0.3169	0.2819	0.3562	0.3477	0.3802	0.5186
	NVA	0.5382	0.4866	0.4948	0.4347	0.4522	0.5534	0.7445	0.7297
25	Units	0.6465	0.6226	0.5023	0.5312	0.5173	0.4872	0.6071	0.6543
	Prod K	0.4906	0.5469	0.5996	0.4049	0.4572	0.4727	0.6284	0.5562
	Emp	0.5521	0.5341	0.5618	0.4721	0.4881	0.5034	0.5921	0.5752
	K/L	0.5008	0.4470	0.4195	0.4975	0.3194	0.3295	0.4423	0.4344
	NVA	0.7649	0.5049	0.5003	0.3880	0.5149	0.5152	0.6638	0.6014
26	Units	0.9686	0.9733	0.8061	0.9380	0.9458	0.9191	0.9189	0.8688
	Prod K	0.9832	0.9919	0.5196	0.9687	0.9900	0.9718	0.9015	0.8669
	Emp	0.9851	0.9877	0.5865	0.9284	0.9516	0.9157	0.9057	0.9017
	K/L	0.5020	0.5221	0.6610	0.4010	0.5330	0.5105	0.4744	0.4438
	NVA	0.9915	0.9945	0.7900	0.9611	0.9841	0.9628	0.9569	0.9443
27	Units	0.3133	0.2922	0.2870	0.1892	0.2241	0.2550	0.2288	0.2495
	Prod K	0.4381	0.4705	0.3214	0.3515	0.5614	0.5899	0.4848	0.6164
	Emp	0.4506	0.4474	0.3329	0.3308	0.4257	0.4972	0.4097	0.5033
	K/L	0.2104	0.2105	0.1753	0.1470	0.1792	0.1654	0.1688	0.2119
	NVA	0.4529	0.4672	0.6020	0.5766	0.4313	0.6390	0.5458	0.3959
28	Units	0.6460	0.7062	0.4510	0.6501	0.5932	0.5691	0.5783	0.5672
	Prod K	0.6594	0.6671	0.4253	0.5247	0.5356	0.5240	0.5699	0.5747
	Emp	0.5998	0.5989	0.4085	0.5041	0.5119	0.5062	0.5081	0.4584
	K/L	0.1733	0.1815	0.2679	0.2033	0.2032	0.1985	0.1949	0.2026
	NVA	0.6569	0.6701	0.6470	0.6323	0.6355	0.6002	0.5401	0.5694
29	Units	0.8554			0.8865			0.764	0.6800
	Prod K	0.864			0.9672			0.8697	0.8169
	Emp	0.845			0.9432			0.7623	0.6355
	K/L	0.652			0.5392			0.7753	0.6107
	NVA	0.7842			0.9642			0.7632	0.8231

30	Units	0.8799	0.8538	0.5602	0.6529	0.5486	0.5165	0.5822	0.5048
	Prod K	0.5525	0.4804	0.8174	0.5742	0.5742	0.5063	0.5065	0.5542
	Emp	0.6811	0.5919	0.6400	0.6630	0.4752	0.5086	0.5491	0.4824
	K/L	0.5281	0.3453	0.4253	0.4430	0.4019	0.5618	0.3799	0.5454
	NVA	0.4812	0.4839	0.4581	0.4983	0.4192	0.4763	0.4713	0.4821
31	Units	0.6285	0.6523	0.4864	0.7916	0.7870	0.7628	0.7807	0.7283
	Prod K	0.6908	0.6559	0.7455	0.8007	0.4840	0.4852	0.4813	0.4629
	Emp	0.6893	0.6856	0.4959	0.6126	0.5805	0.5398	0.6113	0.5060
	K/L	0.8936	0.8787	0.4064	0.7593	0.3169	0.4329	0.2653	0.2968
	NVA	0.4949	0.4994	0.8173	0.6895	0.5931	0.5983	0.5178	0.5220
32	Units	0.4458	0.5382	0.7444	0.3627	0.4123	0.4840	0.4308	0.4251
	Prod K	0.4647	0.4727	0.5656	0.3186	0.3978	0.3866	0.3505	0.3392
	Emp	0.7645	0.5667	0.7932	0.6312	0.4475	0.5088	0.4589	0.3668
	K/L	0.5534	0.5093	0.4794	0.5190	0.4492	0.3900	0.3588	0.3306
	NVA	0.7760	0.4633	0.4857	0.3334	0.3723	0.2748	0.3445	0.3891
33	Units	0.8341	0.5771	0.6039	0.7297	0.7227	0.7140	0.7427	0.7249
	Prod K	0.7997	0.8096	0.8451	0.6935	0.6499	0.5662	0.4641	0.4628
	Emp	0.8543	0.8547	0.7408	0.6033	0.5758	0.6545	0.6617	0.6847
	K/L	0.2788	0.2856	0.2926	0.8216	0.8186	0.8585	0.7728	0.7561
	NVA	0.9172	0.7963	0.5719	0.7474	0.7149	0.4730	0.6308	0.4205
34	Units	0.7584	0.9091	0.4513	0.6993	0.6902	0.6218	0.5912	0.5624
	Prod K	0.7846	0.6741	0.5587	0.8387	0.6948	0.6312	0.7175	0.6464
	Emp	0.7056	0.6465	0.5093	0.6779	0.6803	0.6393	0.6491	0.6071
	K/L	0.2069	0.4437	0.2587	0.3105	0.2528	0.2619	0.2023	0.1985
	NVA	0.7381	0.8307	0.7689	0.7584	0.6976	0.6253	0.6803	0.6269
35+36	Units	0.8329	0.9112	0.4708	0.8622	0.8544	0.8374	0.7997	0.8039
	Prod K	0.4924	0.8835	0.7464	0.8173	0.8231	0.8663	0.7903	0.8246
	Emp	0.6538	0.9058	0.5736	0.9586	0.8192	0.8571	0.8338	0.8286
	K/L	0.2695	0.3396	0.2914	0.2986	0.2533	0.2948	0.3057	0.2248
	NVA	0.5415	0.8787	0.6360	0.7936	0.6742	0.8860	0.8611	0.8096
37	Units	0.7863	0.7598	0.5086	0.7651	0.7381	0.8084	0.7899	0.8154
	Prod K	0.3957	0.3958	0.7335	0.5853	0.5231	0.5123	0.4237	0.4988
	Emp	0.4979	0.4752	0.6753	0.4730	0.5075	0.5093	0.4767	0.5061
	K/L	0.2215	0.2175	0.2074	0.2235	0.1997	0.2450	0.2860	0.2600
	NVA	0.7010	0.4394	0.6986	0.5237	0.7218	0.4922	0.5038	0.4816
38	Units	0.761	0.7611	0.4928	0.8339	0.8368	0.7721	0.8928	0.7603
	Prod K	0.4.335	0.7609	0.5308	0.7142	0.6421	0.4388	0.4664	0.4115
	Emp	0.756	0.7842	0.3625	0.8177	0.5415	0.3663	0.4023	0.4527
	K/L	0.5467	0.7699	0.3997	0.4699	0.3542	0.5736	0.4269	0.3907
	NVA	0.7832	0.7644	0.6446	0.6329	0.8306	0.4251	0.4610	0.4501
40	Units	0.3956	0.3956	0.3491	0.1902	0.2346	0.2401	0.2768	0.3926
	Prod K	0.8900	0.8906	0.9620	0.3390	0.9016	0.8769	0.8501	0.9898
	Emp	0.8057	0.8275	0.8940	0.4311	0.6811	0.6856	0.6179	0.9257
	K/L	0.4646	0.4556	0.4712	0.2142	0.3275	0.3242	0.3383	0.6380
	NVA	0.9063	0.8826	0.9177	0.4099	0.6056	0.7066	0.6234	0.9037

Table: C.5.4: HH Results for Smaller States and UT for 1985-95

			10-Yearly H.H. Results for 12 Small States							
		86-87	87-88	88-89	89-90	90-91	91-92	92-93	93-94	94-95	95-96
20+21	Units	0.2664	0.2667	0.2998	0.2797	0.2451	0.2988	0.2352	0.3239	0.2659	0.2004
	Prod K	0.6184	0.5061	0.4729	0.5544	0.4812	0.5323	0.4181	0.3849	0.5683	0.3704
	Emp	0.4514	0.4109	0.3274	0.3859	0.3824	0.3784	0.3335	0.3466	0.3716	0.3237
	K/L	0.2045	0.1498	0.2311	0.1447	0.2205	0.2301	0.1718	0.2129	0.1711	0.1510
	NVA	0.4907	0.6166	0.4170	0.3991	0.3656	0.2366	0.3347	0.4397	0.6234	0.3880
22	Units	0.4626	0.3664	0.3041	0.6993	0.6709	0.7660	0.7925	0.6100	0.6149	0.5510
	Prod K	0.3816	0.3618	0.5343	0.5282	0.3097	0.4200	0.4663	0.6733	0.4144	0.4423
	Emp	0.5828	0.4620	0.5870	0.6024	0.5209	0.5224	0.5657	0.6340	0.5312	0.3911
	K/L	0.2957	0.2843	0.2654	0.2732	0.4141	0.3092	0.3425	0.2939	0.3814	0.3844
	NVA	0.5618	0.5343	0.3601	0.3429	0.5253	0.3705	0.4696	0.4778	0.4714	0.6091
23	Units	0.4252	0.4652	0.5331	0.5313	0.5283	0.5299	0.5602	0.5998	0.5968	0.5156
	Prod K	0.5384	0.6067	0.9726	0.6902	0.6957	0.8940	0.7206	0.6999	0.5882	0.7686
	Emp	0.4856	0.4818	0.6124	0.5027	0.5018	0.5025	0.5115	0.5215	0.5254	0.5866
	K/L	0.4580	0.6421	0.9900	0.6620	0.6729	0.8799	0.6623	0.6197	0.5232	0.6038
	NVA	0.4864	0.4897	0.7397	0.5420	0.5301	0.6221	0.5503	0.6077	0.6140	0.5281
24	Units	0.5004	0.8472	0.5037	0.3896	0.5856	0.5868	0.4016	0.3826	0.3961	0.4014
	Prod K	0.5081	0.5556	0.7227	0.4967	0.9607	0.9364	0.5179	0.5808	0.4783	0.5361
	Emp	0.4524	0.6676	0.4365	0.5183	0.5992	0.5873	0.5951	0.5804	0.5965	0.5182
	K/L	0.4447	0.5463	0.4687	0.4732	0.9038	0.8586	0.6680	0.6044	0.5447	0.4649
	NVA	0.5532	0.6890	0.6265	0.8507	0.9139	0.8546	0.4194	0.7607	0.6305	0.6334
25	Units	0.46278	0.65622	0.51837	0.46043	0.55698	0.55834	0.48088	0.49119	0.49647	0.45847
	Prod K	0.52324	0.58112	0.84766	0.59343	0.82819	0.91517	0.61923	0.64035	0.53328	0.65234
	Emp	0.46897	0.5747	0.52448	0.51051	0.5505	0.54491	0.55333	0.55093	0.56092	0.5524
	K/L	0.45137	0.59421	0.72936	0.5676	0.78834	0.86926	0.66516	0.61205	0.53392	0.53437
	NVA	0.51979	0.58936	0.68307	0.69634	0.72203	0.73835	0.48484	0.68417	0.62225	0.58075
26	Units	0.8910	0.8081	0.9270	0.5557	0.5237	0.5503	0.5709	0.5793	0.5875	0.8940
	Prod K	0.8697	0.8404	0.9796	0.6433	0.5361	0.6029	0.6860	0.6261	0.6318	0.9122
	Emp	0.8641	0.8571	0.9582	0.6082	0.5200	0.5369	0.5854	0.6134	0.5997	0.8484
	K/L	0.4615	0.2656	0.3950	0.3338	0.4009	0.4369	0.3663	0.3489	0.3672	0.4071
	NVA	0.9408	0.9349	0.9915	0.9637	0.9947	0.9521	0.9549	0.9782	0.9802	0.9415
27	Units	0.2229	0.2362	0.2295	0.1994	0.1976	0.2140	0.2004	0.2463	0.2022	0.2964
	Prod K	0.5365	0.5113	0.4502	0.3835	0.4961	0.4253	0.4298	0.4924	0.4403	0.5116
	Emp	0.5058	0.4963	0.4627	0.3738	0.3929	0.3940	0.3223	0.3571	0.3726	0.5081
	K/L	0.1646	0.1779	0.2092	0.1481	0.1536	0.1723	0.1642	0.1698	0.1687	0.1760
	NVA	0.3449	0.4574	0.3595	0.2279	0.4342	0.4893	0.3712	0.4545	0.4687	0.3654
28	Units	0.5698	0.6176	0.5737	0.5013	0.4844	0.4941	0.5134	0.4394	0.4726	0.3892
	Prod K	0.6775	0.7095	0.6722	0.4747	0.5005	0.4436	0.3672	0.5303	0.5737	0.5140
	Emp	0.4915	0.5965	0.5016	0.4443	0.4098	0.4086	0.4402	0.4655	0.4567	0.4256
	K/L	0.2183	0.2143	0.1970	0.1896	0.2289	0.3450	0.2901	0.2048	0.2489	0.2024
	NVA	0.4911	0.7467	0.6182	0.6264	0.4769	0.6718	0.6419	0.7601	0.8227	0.5686
29	Units	0.5918	0.6488	0.5556	0.6878	0.5556	0.5776	0.5623	0.6318	0.5837	0.5009
	Prod K	0.5002	0.5196	0.5335	0.5927	0.5349	0.5740	0.6521	0.6567	0.8996	0.6725
	Emp	0.5160	0.5104	0.5009	0.5924	0.5094	0.5001	0.8290	0.4521	0.5261	0.5076
	K/L	0.5192	0.5553	0.5443	0.5000	0.5749	0.5701	0.9432	0.4515	0.9344	0.7196
	NVA	0.5160	0.7779	0.5839	0.8617	0.7881	0.8691	0.5769	0.7016	0.8857	0.5002
30	Units	0.4608	0.5171	0.5306	0.4151	0.6658	0.6430	0.6578	0.6001	0.6089	0.3489
	Prod K	0.5146	0.4967	0.3983	0.4149	0.8174	0.9108	0.7705	0.7939	0.8122	0.3056

	Emp	0.4250	0.4780	0.4591	0.3957	0.6643	0.6728	0.6829	0.6665	0.6322	0.2958
	K/L	0.4255	0.4099	0.3186	0.2713	0.2347	0.3400	0.2066	0.2536	0.2209	0.2175
	NVA	0.5766	0.4133	0.7882	0.3953	0.3917	0.3972	0.3319	0.4854	0.3667	0.5155
31	Units	0.6990	0.7011	0.6382	0.6577	0.5248	0.5296	0.5245	0.5307	0.4989	0.4944
	Prod K	0.4415	0.4905	0.3589	0.3768	0.9110	0.8515	0.7156	0.8748	0.8668	0.4604
	Emp	0.5556	0.6037	0.5007	0.5438	0.5378	0.5591	0.5553	0.5641	0.5722	0.4523
	K/L	0.2177	0.2207	0.1911	0.2287	0.3517	0.2703	0.2258	0.3451	0.2691	0.3206
	NVA	0.5102	0.4929	0.4525	0.4957	0.4266	0.4829	0.5246	0.4726	0.4687	0.4386
32	Units	0.4253	0.4136	0.3924	0.4781	0.6350	0.3826	0.3466	0.6575	0.7022	0.1980
	Prod K	0.3476	0.2637	0.4741	0.3147	0.5352	0.3626	0.3514	0.4203	0.4506	0.4375
	Emp	0.5047	0.4797	0.4142	0.4999	0.6794	0.3428	0.3038	0.7050	0.7090	0.1994
	K/L	0.4069	0.5121	0.6127	0.3639	0.3938	0.2826	0.2025	0.4183	0.3780	0.3228
	NVA	0.3124	0.3579	0.2921	0.4424	0.5340	0.4763	0.3907	0.2792	0.3199	0.1899
33	Units	0.7193	0.7421	0.6867	0.6517	0.5382	0.6957	0.6094	0.4536	0.6424	0.5765
	Prod K	0.4505	0.4421	0.3494	0.3188	0.8053	0.3626	0.3551	0.6593	0.6836	0.2399
	Emp	0.6969	0.6857	0.5852	0.4701	0.6641	0.5674	0.4462	0.5721	0.6800	0.3437
	K/L	0.7807	0.6292	0.5751	0.3459	0.2856	0.3301	0.3092	0.2726	0.4301	0.4725
	NVA	0.3836	0.6647	0.4210	0.3477	0.4284	0.3989	0.3763	0.2732	0.9714	0.3008
34	Units	0.5732	0.5513	0.5319	0.5408	0.4626	0.5810	0.5891	0.4274	0.7204	0.4849
	Prod K	0.6198	0.7166	0.6964	0.6200	0.4824	0.7596	0.7522	0.6425	0.7740	0.3607
	Emp	0.5903	0.5890	0.5718	0.5358	0.5456	0.6311	0.6423	0.5523	0.6412	0.4764
	K/L	0.2301	0.3824	0.2024	0.2171	0.3533	0.2626	0.2982	0.2823	0.8997	0.2718
	NVA	0.7033	0.6810	0.6192	0.5852	0.5010	0.7242	0.7248	0.5932	0.8223	0.3449
35+36	Units	0.7772	0.7757	0.7708	0.7497	0.4833	0.7558	0.7557	0.4673	0.7235	0.8364
	Prod K	0.8043	0.7440	0.7729	0.6639	0.7788	0.5897	0.5983	0.7288	0.8213	0.7667
	Emp	0.8158	0.8019	0.8123	0.7970	0.5962	0.7550	0.7630	0.6152	0.8150	0.8705
	K/L	0.3314	0.3652	0.2602	0.2494	0.2548	0.2884	0.2607	0.2068	0.6767	0.8355
	NVA	0.7922	0.8159	0.8417	0.8403	0.7793	0.6718	0.7461	0.6457	0.9086	0.8439
37	Units	0.7829	0.8345	0.7972	0.8175	0.4729	0.4668	0.4788	0.4877	0.6155	0.8708
	Prod K	0.4768	0.5584	0.4560	0.4729	0.7863	0.5615	0.5956	0.5383	0.8736	0.9140
	Emp	0.5011	0.6127	0.5633	0.6209	0.6714	0.6784	0.6738	0.6562	0.9827	0.8142
	K/L	0.3478	0.5341	0.3800	0.3095	0.2635	0.3278	0.3034	0.3426	0.8784	0.5881
	NVA	0.4489	0.5341	0.5159	0.5502	0.6655	0.6167	0.7200	0.6606	0.4448	0.4140
38	Units	0.5502	0.5697	0.4634	0.3919	0.4008	0.3812	0.4008	0.4047	0.1724	0.9736
	Prod K	0.4036	0.3540	0.2800	0.3133	0.6377	0.5010	0.5185	0.5440	0.5011	0.8562
	Emp	0.2841	0.2446	0.2316	0.1906	0.2995	0.2909	0.3171	0.3206	0.9857	0.8140
	K/L	0.3550	0.2367	0.3415	0.5900	0.2077	0.2379	0.1821	0.1969	0.8231	0.4535
	NVA	0.3958	0.3515	0.2286	0.3262	0.2741	0.2637	0.3517	0.3170	0.6446	0.6855
40	Units	0.4194	0.3958	0.4180	0.3806	0.2915	0.3600	0.3346	0.8005	0.4071	0.2030
	Prod K	0.3104	0.8575	0.3707	0.4297	0.7387	0.9699	0.9525	0.9755	0.6972	0.0873
	Emp	0.2999	0.2392	0.3099	0.2849	0.8028	0.8790	0.8128	0.8246	0.8044	0.8798
	K/L	0.2345	0.8070	0.4212	0.2537	0.3834	0.2901	0.3451	0.3836	0.5229	0.4926
	NVA	0.2999	0.7228	0.2643	0.2556	0.7627	0.7259	0.2433	0.4326	0.9499	0.8253

Table: C.5.5: 10year HH Results for Large States for 1959-65

		59-60	60-61	61-62	62-63	63-64	64-65	65-66
20+21	Units	0.1218	0.1174	0.1161	0.1229	0.118	0.111	0.1089
	Prod K	0.1494	0.1426	0.8755	0.1343	0.1565	0.1204	0.1219
	Emp	0.1232	0.1232	0.1316	0.1266	0.1269	0.1198	0.1203
	K/L	0.0982	0.0805	0.4009	0.0875	0.0926	0.082	0.0838
	NVA	0.1459	0.1256	0.1278	0.1175	0.1197	0.1106	0.1044
22	Units	0.229	0.2323	0.2234	0.2498	0.4503	0.3213	0.3186
	Prod K	0.1669	0.181	0.1682	0.2202	0.2586	0.2105	0.2052
	Emp	0.3802	0.3957	0.3756	0.5789	0.6137	0.5562	0.5346
	K/L	0.1361	0.7956	0.132	0.7113	0.2254	0.1831	0.161
	NVA	0.1689	0.1735	0.1884	0.2173	0.5953	0.2058	0.1927
25	Units	0.1573	0.1563	0.1505	0.1349	0.1625	0.1298	0.1476
	Prod K	0.1926	0.1872	0.1768	0.1997	0.2014	0.1698	0.167
	Emp	0.1901	0.1847	0.1685	0.1967	0.2168	0.1931	0.1862
	K/L	0.0855	0.0848	0.0826	0.0843	0.2014	0.0981	0.0825
	NVA	0.2102	0.1784	0.2024	0.1993	0.1934	0.1862	0.1984
26	Units	0.1684	0.1628	0.1692	0.1736	0.1677	0.1516	0.1565
	Prod K	0.1479	0.1513	0.1618	0.175	0.1756	0.1756	0.198
	Emp	0.1705	0.1635	0.1962	0.1934	0.1926	0.1789	0.1527
	K/L	0.0993	0.0978	0.1151	0.1082	0.0907	0.0952	0.0983
	NVA	0.8494	0.149	0.3072	0.1498	0.1727	0.1888	0.1758
27	Units	0.2117	0.1952	0.1615	0.1542	0.154	0.1278	0.1177
	Prod K	0.1823	0.2154	0.2557	0.2171	0.311	0.2142	0.2105
	Emp	0.1632	0.1789	0.1716	0.1684	0.1674	0.1438	0.1331
	K/L	0.1128	0.1143	0.1198	0.1119	0.1855	0.1027	0.0905
	NVA	0.6285	0.2783	0.3097	0.2983	0.2344	0.254	0.2526
28	Units	0.167	0.1671	0.169	0.1912	0.1746	0.1707	0.1833
	Prod K	0.1696	0.135	0.1606	0.128	0.14	0.1201	0.1257
	Emp	0.1596	0.144	0.1658	0.1629	0.1519	0.1512	0.1524
	K/L	0.1173	0.0971	0.0897	0.7755	0.0923	0.1211	0.1118
	NVA	0.1959	0.1635	0.2087	0.1826	0.1736	0.1683	0.132
29	Units	0.3533	0.4381	0.5	0.4817	0.3801	0.3724	0.3882
	Prod K	0.4212	0.5128	0.6884	0.8924	0.4846	0.4498	0.4315
	Emp	0.4229	0.4379	0.5756	0.4759	0.4877	0.4546	0.4253
	K/L	0.3337	0.2663	0.5437	0.5081	0.2825	0.2535	0.2597
	NVA	0.5516	0.4155	0.5214	0.4329	0.4182	0.4006	0.3562
30	Units	0.2448	0.2249	0.3098	0.2429	0.2375	0.2395	0.2307

	Prod K	0.6818	0.6427	0.6452	0.4582	0.4578	0.3873	0.3248
	Emp	0.4419	0.4352	0.4952	0.3915	0.2874	0.3504	0.3399
	K/L	0.5354	0.4551	0.4179	0.2252	0.2158	0.2079	0.1917
	NVA	0.4876	0.466	0.4912	0.5177	0.4398	0.3218	0.3186
31	Units	0.1657	0.2014	0.2014	0.2051	0.2072	0.1462	0.1925
	Prod K	0.1839	0.2044	0.1803	0.1652	0.1952	0.1731	0.2081
	Emp	0.1612	0.1773	0.3926	0.1721	0.2017	0.1908	0.1901
	K/L	0.1305	0.1272	0.206	0.1642	0.108	0.1237	0.1017
	NVA	0.2506	0.6659	0.2752	0.2592	0.2977	0.2619	0.2718
32	Units	0.1142	0.1104	0.1139	0.1153	0.1104	0.105	0.1055
	Prod K	0.1107	0.093	0.1382	0.1419	0.1181	0.1149	0.1145
	Emp	0.1113	0.0984	0.1166	0.1174	0.111	0.1187	0.1017
	K/L	0.1041	0.1019	0.1424	0.1339	0.1176	0.1149	0.1065
	NVA	0.1176	0.1044	0.131	0.1658	0.1127	0.1034	0.1027
33	Units	0.2072	0.2208	0.2319	0.2138	0.197	0.184	0.1812
	Prod K	0.4089	0.396	0.4019	0.2298	0.23	0.2231	0.2182
	Emp	0.2796	0.2626	0.2829	0.2105	0.2056	0.2057	0.1917
	K/L	0.1254	0.831	0.1499	0.2298	0.1457	0.1398	0.4942
	NVA	0.3048	0.3064	0.3383	0.3485	0.2912	0.2403	0.2206
34	Units	0.1999	0.1941	0.2017	0.2186	0.2284	0.2165	0.2049
	Prod K	0.3036	0.3318	0.3375	0.3019	0.3234	0.3405	0.8405
	Emp	0.2574	0.2625	0.259	0.2569	0.2641	0.2509	0.2528
	K/L	0.0935	0.093	0.0996	0.1149	0.0926	0.0928	0.5454
	NVA	0.2937	0.3112	0.29	0.274	0.3167	0.307	0.2517
35+36	Units	0.1537	0.1616	0.1675	0.1643	0.164	0.1529	0.1556
	Prod K	0.1801	0.1952	0.2094	0.182	0.1724	0.1799	0.1465
	Emp	0.1825	0.1872	0.1857	0.1664	0.1573	0.1833	0.169
	K/L	0.0893	0.7991	0.0845	0.0874	0.0904	0.0946	0.0962
	NVA	0.5593	0.7686	0.2295	0.2025	0.1893	0.2131	0.1929
37	Units	0.1938	0.1826	0.2053	0.213	0.1644	0.1722	0.1668
	Prod K	0.2704	0.2796	0.2267	0.2269	0.1904	0.2247	0.1847
	Emp	0.1978	0.2227	0.212	0.2044	0.21	0.1973	0.2084
	K/L	0.1094	0.1167	0.127	0.1178	0.1187	0.1053	0.8701
	NVA	0.5569	0.2467	0.2248	0.2402	0.1861	0.2281	0.1814
38	Units	0.1805	0.1882	0.2011	0.2574	0.2406	0.222	0.2083
	Prod K	0.2624	0.2797	0.3861	0.2732	0.3335	0.2531	0.2579
	Emp	0.6088	0.2529	0.2605	0.3167	0.2565	0.2152	0.2487
	K/L	0.1764	0.1239	0.1298	0.149	0.127	0.1414	0.1081
	NVA	0.799	0.3027	0.4119	0.3823	0.3695	0.2691	0.3317
40	Units	0.1228	0.1447	0.167	0.1168	0.1189	0.1516	0.1512
	Prod K	0.2141	0.2155	0.2281	0.2189	0.132	0.1105	0.1108
	Emp	0.1714	0.1764	0.1966	0.1471	0.1492	0.1179	0.1112
	K/L	0.2243	0.2498	0.1727	0.1137	0.1155	0.0935	0.0986
	NVA	0.3544	0.2356	0.1881	0.1706	0.1555	0.1281	0.1333

Table: C.5.6: 10Year HH Results for Large States for 1966-75

		66-67	67-68	68-69	69-70	70-71	73-74	74-75
20+21	Units	0.11361	0.11388	0.10913	0.10509	0.10352	0.10488	0.09783
	Prod K	0.12729	0.12571	0.13072	0.13411	0.1516	0.10168	0.10436
	Emp	0.11845	0.12342	0.1241	0.11694	0.11001	0.24599	0.1005
	K/L	0.07811	0.0836	0.0751	0.08023	0.08066	0.07681	0.07198
	NVA	0.11697	0.12525	0.11555	0.13282	0.12315	0.11042	0.09651
22	Units	0.3894	0.34202	0.39285	0.40966	0.41641	0.29174	0.24974
	Prod K	0.61601	0.25202	0.26545	0.31118	0.27879	0.16405	0.18476
	Emp	0.56553	0.4215	0.60013	0.53389	0.55095	0.44972	0.39942
	K/L	0.63022	0.25644	0.28561	0.1575	0.16084	0.14854	0.09042
	NVA	0.21603	0.22831	0.24834	0.25219	0.25239	0.21215	0.36352
25	Units	0.13644	0.14182	0.14133	0.13136	0.14014	0.13838	0.12679
	Prod K	0.16548	0.16702	0.15361	0.15489	0.1582	0.17097	0.18528
	Emp	0.17459	0.17432	0.16659	0.16353	0.16121	0.17007	0.19091
	K/L	0.07063	0.07409	0.06942	0.06995	0.07626	0.16782	0.50989
	NVA	0.20518	0.88811	0.19051	0.22236	0.18308	0.22784	0.20334
26	Units	0.16692	0.16605	0.17209	0.20782	0.18281	0.15019	0.11825
	Prod K	0.17748	0.31912	0.19776	0.21317	0.20832	0.20307	0.15072
	Emp	0.18943	0.21246	0.19586	0.24402	0.23707	0.18996	0.1398
	K/L	0.09468	0.62271	0.11146	0.09882	0.10127	0.09017	0.0727
	NVA	0.17478	0.61655	0.19277	0.2172	0.22508	0.77548	0.16797
27	Units	0.11989	0.11512	0.1216	0.51978	0.12849	0.38043	0.10048
	Prod K	0.21489	0.20031	0.20557	0.22175	0.97466	0.14411	0.40409
	Emp	0.14004	0.15416	0.14658	0.15901	0.1488	0.1418	0.10246
	K/L	0.14473	0.80172	0.10227	0.08792	0.90638	0.0961	0.62988
	NVA	0.24483	0.26643	0.27908	0.24577	0.88985	0.16295	0.12701
28	Units	0.16141	0.14785	0.15059	0.15172	0.15359	0.14888	0.19748
	Prod K	0.12303	0.11664	0.12484	0.23252	0.93981	0.11626	0.10538
	Emp	0.12565	0.13889	0.39457	0.1199	0.37348	0.11942	0.12147
	K/L	0.10356	0.80091	0.10822	0.28081	0.69865	0.08929	0.07946
	NVA	0.15229	0.14749	0.14862	0.16531	0.14455	0.73883	0.10979
29	Units	0.33033	0.38067	0.45218	0.3698	0.36843	0.20898	0.30014
	Prod K	0.37877	0.38399	0.44422	0.36177	0.31965	0.36444	0.25456
	Emp	0.39208	0.40017	0.40145	0.34897	0.36422	0.2873	0.26397
	K/L	0.16905	0.24245	0.26042	0.21995	0.226	0.45892	0.11287
	NVA	0.39005	0.3757	0.39344	0.6525	0.37679	0.72443	0.37811
30	Units	0.21277	0.23091	0.1956	0.21024	0.17516	0.15023	0.14374
	Prod K	0.33247	0.24549	0.2949	0.91497	0.25626	0.18787	0.15908
	Emp	0.31781	0.32376	0.28434	0.40837	0.23089	0.19365	0.1668
	K/L	0.21778	0.91044	0.18865	0.49327	0.17436	0.11456	0.091
	NVA	0.27618	0.24185	0.39916	0.27591	0.28456	0.17476	0.17865
31	Units	0.20244	0.16861	0.16704	0.20936	0.19168	0.7557	0.13026
	Prod K	0.20583	0.19929	0.21054	0.21318	0.20359	0.17842	0.14738
	Emp	0.17803	0.18905	0.17848	0.18212	0.1156	0.167	0.15631
	K/L	0.1597	0.11585	0.09587	0.10305	0.13889	0.09141	0.07759

	NVA	0.20378	0.23875	0.25841	0.21562	0.24115	0.32427	0.25167
32	Units	0.10503	0.10324	0.10345	0.10599	0.11242	0.1003	0.11667
	Prod K	0.10993	0.10194	0.11051	0.8025	0.15079	0.08846	0.09586
	Emp	0.69389	0.09567	0.09326	0.09708	0.10081	0.09153	0.10641
	K/L	0.1095	0.09092	0.09498	0.62349	0.09726	0.14268	0.37492
	NVA	0.10625	0.10084	0.09206	0.09519	0.10335	0.09895	0.33014
33	Units	0.1649	0.16656	0.1403	0.14141	0.13085	0.10387	0.10662
	Prod K	0.20563	0.211	0.19299	0.18248	0.17794	0.15863	0.13091
	Emp	0.1773	0.17461	0.17328	0.15944	0.16179	0.15242	0.13633
	K/L	0.1256	0.12499	0.11023	0.09133	0.09899	0.0955	0.12899
	NVA	0.17559	0.21204	0.1912	0.16682	0.16204	0.477	0.15456
34	Units	0.19979	0.20023	0.20596	0.19863	0.19564	0.14736	0.11325
	Prod K	0.29743	0.27541	0.2737	0.25729	0.25362	0.20354	0.17782
	Emp	0.24317	0.23422	0.22047	0.24568	0.22837	0.20135	0.15605
	K/L	0.0942	0.37582	0.10604	0.09094	0.10265	0.07549	0.06508
	NVA	0.29902	0.29515	0.35379	0.26665	0.28692	0.26706	0.25361
35+36	Units	0.14194	0.14125	0.14149	0.14294	0.14355	0.13365	0.11604
	Prod K	0.13091	0.12764	0.13502	0.13629	0.12912	0.11647	0.11512
	Emp	0.15316	0.27856	0.13568	0.13908	0.14357	0.13097	0.1253
	K/L	0.08364	0.11327	0.08087	0.07539	0.08504	0.07371	0.07694
	NVA	0.18778	0.17419	0.17813	0.16345	0.16528	0.16903	0.13808
37	Units	0.15477	0.18946	0.14489	0.13798	0.1462	0.11805	0.13479
	Prod K	0.20331	0.19205	0.17621	0.19	0.18618	0.17559	0.18001
	Emp	0.44869	0.18481	0.19282	0.17071	0.20629	0.16323	0.18192
	K/L	0.09232	0.094	0.10132	0.1078	0.82305	0.18616	0.1181
	NVA	0.19339	0.16294	0.15303	0.15782	0.16	0.13121	0.16
38	Units	0.20249	0.21693	0.25314	0.25103	0.26399	0.1921	0.14841
	Prod K	0.25835	0.26783	0.26448	0.27485	0.2964	0.58841	0.18715
	Emp	0.24987	0.24157	0.2583	0.21845	0.26421	0.20327	0.15791
	K/L	0.11615	0.16159	0.1315	0.12366	0.10761	0.21823	0.07366
	NVA	0.34065	0.37539	0.369	0.30564	0.60487	0.93895	0.19146
40	Units	0.14476	0.14794	0.14554	0.15084	0.12618	0.14055	0.16028
	Prod K	0.09643	0.09461	0.09031	0.09697	0.08728	0.10435	0.10093
	Emp	0.10399	0.10284	0.09926	0.10832	0.09621	0.10631	0.0869
	K/L	0.08775	0.6405	0.08353	0.84246	0.07628	0.21232	0.08764
	NVA	0.12466	0.13389	0.11442	0.11011	0.89079	0.1459	0.10939
41	Units		0.8	0.66759		0.8	0.20165	0.15592
	Prod K		0.8	0.75686		0.8	0.32635	0.94389
	Emp		0.8	0.59955		0.8	0.23935	0.74824
	K/L		0.8	0.57909		0.8	0.27807	0.28316
	NVA		0.8	0.51052		0.8	0.35798	0.66749

Table: C.5.7: 10Year HH Results for Large States for 1976-85

		76-77	77-78	79-80	80-81	81-82	82-83	83-84	84-85	85-86
20+21	Units	0.09229	0.09131	0.09259	0.09545	0.09403	0.10184	0.10185	0.1054556	0.1085888
	Prod K	0.10909	0.09421	0.10659	0.10532	0.11018	0.11051	0.11545	0.1145183	0.1036445
	Emp	0.10153	0.09602	0.10145	0.10411	0.10707	0.102	0.09863	0.1000314	0.0958447
	K/L	0.0777	0.09265	0.06881	0.07838	0.07449	0.07215	0.06816	0.0673265	0.0659295
	NVA	0.10232	0.10214	0.0975	0.09831	0.10933	0.1147	0.09688	0.1053197	0.104703
22	Units	0.185	0.29636	0.36483	0.34549	0.34357	0.33788	0.35112	0.2147192	0.3235972
	Prod K	0.1227	0.12462	0.12143	0.10809	0.12261	0.14399	0.14106	0.1423974	0.1679793
	Emp	0.42294	0.35059	0.38288	0.35561	0.39089	0.40448	0.41355	0.3187665	0.3434828
	K/L	0.0984	0.09004	0.07849	0.07745	0.07883	0.07703	0.07684	0.0810693	0.1420032
	NVA	0.24091	0.15032	0.14983	0.15759	0.14836	0.1734	0.25809	0.1444484	0.149459
23	Units	0.15391	0.1198	0.12225	0.12307	0.12346	0.12612	0.12722	0.1287644	0.1264783
	Prod K	0.17316	0.17617	0.48717	0.39787	0.36763	0.33727	0.28471	0.2827254	0.251108
	Emp	0.16994	0.16555	0.16221	0.15878	0.14082	0.16376	0.15919	0.1351476	0.1317386
	K/L	0.06925	0.071	0.12094	0.51951	2.61058	0.3637	0.41557	0.3597071	0.2359203
	NVA	0.20771	0.21276	0.17865	0.17327	0.19094	0.15591	0.15833	0.1547973	0.1629544
24	Units	0.20311	0.16659	0.16664	0.17648	0.17611	0.15862	0.1501	0.1776978	0.1680136
	Prod K	0.68256	0.14016	0.13448	0.18516	0.18693	0.19481	0.20334	0.1792467	0.1763234
	Emp	0.1703	0.14624	0.15272	0.15847	0.17139	0.16609	0.16762	0.16125	0.1650084
	K/L	0.7722	0.07179	0.0903	0.09288	0.0979	0.09952	0.09641	0.0840788	0.0769466
	NVA	0.18484	0.17318	0.16609	0.21207	0.20773	0.19924	0.22128	0.219464	0.2170742
25	Units	0.31575	0.33677	0.2848	0.27265	0.26067	0.32341	0.27316	0.3082532	0.2737922
	Prod K	0.68295	0.68441	0.5401	0.47875	0.46641	0.24616	0.32333	0.2537622	0.2630212
	Emp	0.88628	0.82147	0.78556	0.7604	0.72345	0.74087	0.7382	0.6726819	0.7171533
	K/L	0.31267	0.18052	0.20359	0.12725	0.14096	0.15309	0.29965	0.1767484	0.1312712
	NVA	0.82087	0.83007	0.80053	0.75623	0.7168	0.75519	0.75512	0.6368907	0.6569734
26	Units	0.15716	0.14254	0.15755	0.1685	0.15916	0.17131	0.15925	0.2070508	0.1720072
	Prod K	0.16827	0.1645	0.14977	0.14384	0.13922	0.1274	0.13239	0.1406716	0.1338359
	Emp	0.19356	0.17631	0.15044	0.14611	0.13627	0.1408	0.13789	0.1408329	0.1454565
	K/L	0.07973	0.08496	0.08821	0.09886	0.09016	0.08127	0.08863	0.0876745	0.0823141
	NVA	0.21513	0.21906	0.17359	0.1707	0.14272	0.13234	0.13882	0.1531979	0.141373
27	Units	0.09082	0.09064	0.09067	0.09287	0.0937	0.10049	0.10125	0.1002972	0.0996982
	Prod K	0.11564	0.11546	0.12419	0.11513	0.10644	0.10546	0.11076	0.1151731	0.1112669
	Emp	0.10956	0.11222	0.10885	0.24342	0.10786	0.10327	0.11308	0.1153258	0.1091266
	K/L	0.06397	0.06299	0.06716	0.07413	0.06512	0.06833	0.09073	0.0779054	0.0679297
	NVA	0.12814	0.14521	0.14001	0.11576	0.13133	0.11553	0.17636	0.1392182	0.1148654
28	Units	0.13258	0.12371	0.12586	0.13131	0.1239	0.1353	0.12588	0.1410827	0.1265846
	Prod K	0.09707	0.09434	0.09607	0.10779	0.11043	0.10635	0.10199	0.0940064	0.1151644
	Emp	0.10758	0.10624	0.10378	0.10236	0.10643	0.10623	0.10709	0.1039863	0.1075041
	K/L	0.11467	0.10881	0.07821	0.08462	0.08502	0.08819	0.09325	0.6713659	0.0731604

	NVA	0.12302	0.12211	0.10889	0.11828	0.1217	0.16168	0.15757	0.1199892	0.136928
29	Units	0.21483	0.26694	0.25892	0.26457	0.2546	0.27836	0.28771	0.3053574	0.3063595
	Prod K	0.22411	0.2476	0.26012	0.25865	0.23154	0.26813	0.31149	0.2477248	0.2047195
	Emp	0.23839	0.23306	0.2329	0.26357	0.25994	0.25063	0.24621	0.2752491	0.2594553
	K/L	0.26574	0.21178	0.14051	0.13456	0.11055	0.10625	0.10275	0.0973159	0.1097496
	NVA	0.28301	0.28999	0.23186	0.29367	0.26353	0.26405	0.30175	0.242562	0.2391505
30	Units	0.1571	0.92263	0.11888	0.12009	0.12307	0.1229	0.12194	0.1204245	0.1179478
	Prod K	0.15825	0.96817	0.12289	0.12668	0.12776	0.11581	0.13962	0.1406332	0.2119965
	Emp	0.14634	0.92996	0.118	0.18589	0.1411	0.1292	0.13794	0.1352682	0.1298978
	K/L	0.13967	0.92691	0.11208	0.15166	0.08213	0.07787	0.07283	0.0701829	0.0738074
	NVA	0.15818	0.93109	0.26955	0.29033	0.2119	0.18228	0.20213	0.1998731	0.1944423
31	Units	0.12975	0.90237	0.14711	0.14813	0.12756	0.13609	0.1192	0.1277819	0.1143119
	Prod K	0.13735	0.92069	0.23061	0.24464	0.1472	0.13038	0.13003	0.3042438	0.1067003
	Emp	0.15029	0.92832	0.24209	0.16199	0.12496	0.1326	0.14473	0.1166458	0.1112555
	K/L	0.07902	0.74185	0.1698	0.0798	0.11065	0.08958	0.09511	0.195884	0.0987799
	NVA	0.26425	0.95216	0.12956	0.1766	0.12655	0.12845	0.19645	0.1296168	0.8329848
32	Units	0.125	0.99916	0.1119	0.11377	0.11	0.10169	0.09822	0.1003859	0.0975163
	Prod K	0.0877	0.64275	0.08353	0.09017	0.09813	0.09975	0.10144	0.0902485	0.0977267
	Emp	0.09409	0.79477	0.09066	0.09663	0.08572	0.08772	0.08505	0.0852829	0.0844976
	K/L	0.10782	0.99517	0.10789	0.14451	0.13171	0.13422	0.30995	0.1913244	0.1127773
	NVA	0.09384	0.74305	0.0851	0.15346	0.08866	0.08862	0.1038	0.1118059	0.0859622
33	Units	0.10139	0.80669	0.09567	0.09597	0.09746	0.09688	0.09518	0.094827	0.0896134
	Prod K	0.20163	0.98009	0.20815	0.20221	0.19766	0.20499	0.18531	0.189473	0.1777334
	Emp	0.13373	0.91164	0.12071	0.11968	0.11782	0.11737	0.12185	0.1244866	0.1140476
	K/L	0.10992	0.80197	0.09321	0.11156	0.0976	0.10579	0.092	0.0894641	0.0869441
	NVA	0.11928	0.91546	0.11617	0.11887	0.16017	0.14948	0.15425	0.1644484	0.1491742
34	Units	0.11524	0.91113	0.10574	0.10745	0.10582	0.11265	0.10682	0.1102636	0.1079284
	Prod K	0.17513	0.9584	0.18308	0.20336	0.18533	0.17145	0.15707	0.1497364	0.1381353
	Emp	0.15238	0.93565	0.14628	0.16064	0.15199	0.15476	0.13816	0.0977164	0.1282861
	K/L	0.06149	0.76234	0.06546	0.14083	0.0642	0.07623	0.06391	0.0701548	0.064948
	NVA	0.24868	0.98031	0.23544	0.24862	0.23546	0.20705	0.23727	0.24797	0.2230735
35+36	Units	0.13203	0.90384	0.12245	0.12766	0.12612	0.12891	0.122	0.1265371	0.118277
	Prod K	0.11133	0.94785	0.10832	0.11417	0.11074	0.11206	0.10892	0.1115328	0.1172549
	Emp	0.13948	0.90544	0.11857	0.11961	0.11791	0.12275	0.11346	0.1147169	0.1101649
	K/L	0.24818	0.46718	0.06862	0.0686	0.06455	0.06976	0.06427	0.0629486	0.0634801
	NVA	0.13469	0.94774	0.1318	0.10054	0.1347	0.15222	0.12673	0.1332632	0.1255964
37	Units	0.14904	0.98966	0.12924	0.13931	0.12849	0.127	0.13381	0.1361975	0.129555
	Prod K	0.13899	0.92207	0.19197	0.19047	0.19169	0.19909	0.20603	0.2200215	0.1736993
	Emp	0.14243	0.92811	0.13987	0.16395	0.14154	0.15394	0.14045	0.1382301	0.1235794
	K/L	0.18444	0.95838	0.18786	0.19072	0.13832	0.19356	0.12808	0.11332	0.1094414
	NVA	0.15304	0.91359	0.15517	0.16948	0.17822	0.16786	0.18729	0.2017677	0.1916751
38	Units	0.25283	0.91513	0.20636	0.21358	0.22182	0.18074	0.16688	0.1770255	0.1571672
	Prod K	0.24591	0.93579	0.16191	0.14778	0.14898	0.14316	0.13679	0.1185117	0.1231731
	Emp	0.15798	0.92688	0.14523	0.15573	0.1497	0.1453	0.14244	0.1486851	0.1341438
	K/L	0.08551	0.72867	0.09435	0.10039	0.09409	0.14413	0.09352	0.2280607	0.081383
	NVA	0.22658	0.94429	0.17352	0.20163	0.15799	0.40289	0.25344	0.2169507	0.2353236
40	Units	0.15194	0.92196	0.15171	0.17443	0.11303	0.12488	0.13613	0.1555008	0.117284
	Prod K	0.08989	0.86086	0.09469	0.09764	0.09248	0.09455	0.09256	0.0948969	0.0908168
	Emp	0.08792	0.79021	0.09778	0.08704	0.08255	0.08583	0.08042	0.0854548	0.0763502

	K/L	0.08971	0.55779	0.59524	0.07255	0.06654	0.09033	0.07217	0.0752907	0.0682749
	NVA	0.10206	0.81344	0.07925	0.08565	0.15275	0.10119	0.10095	0.1197345	0.1160084
41	Units	0.18382	0.81969	0.13608	0.12018	0.10404	0.21181	0.16766	0.2445112	0.119065
	Prod K	0.28367	0.99864	0.17771	0.22128	0.12942	0.32985	0.26961	0.2996059	0.2048634
	Emp	0.30349	0.91309	0.21903	0.18716	0.18928	0.47093	0.24315	0.2255586	0.1399962
	K/L	0.35243	0.91891	0.48042	0.24332	0.12317	0.37867	0.2582	0.188298	0.2041684
	NVA	0.38056	0.92985	0.2292	0.21556	0.11345	0.79034	0.52422	0.8612699	0.2536009

Table: C.5.8: 10Year HH Results for Large States for 1986-95

		86-87	87-88	88-89	89-90	90-91	91-92	92-93	93-94	94-95	95-96
20+21	Units	0.10852	0.11489	0.11636	0.11558	0.11657	0.11817	0.12934	0.12438	0.12106	0.12534
	Prod K	0.10517	0.11125	0.10954	0.10939	0.10493	0.10221	0.10615	0.23738	0.09805	0.09595
	Emp	0.09943	0.10123	0.10152	0.09869	0.09842	0.09764	0.09937	0.0968	0.09746	0.09575
	K/L	0.07541	0.06577	0.06983	0.06865	0.06703	0.06945	0.06938	0.10815	0.08602	0.07643
	NVA	0.109	0.1092	0.11082	0.10106	0.0906	0.0975	0.102	0.09617	0.11482	0.11723
22	Units	0.44177	0.47985	0.45193	0.50977	0.43455	0.47339	0.44797	0.28994	0.41064	0.52246
	Prod K	0.12588	0.11069	0.11269	0.12599	0.11286	0.11115	0.11991	0.14246	0.10836	0.10705
	Emp	0.40083	0.37491	0.3785	0.43629	0.35913	0.39685	0.38605	0.35543	0.37136	0.41142
	K/L	0.16365	0.12445	0.08114	0.08192	0.08435	0.07875	0.08935	0.08555	0.07997	0.08122
	NVA	0.1318	0.12194	0.12265	0.15688	0.12445	0.13771	0.14041	0.12713	0.18122	0.14698
23	Units	0.12872	0.13218	0.13232	0.13745	0.1421	0.15204	0.19206	0.15368	0.15715	0.16069
	Prod K	0.23288	0.23043	0.22255	0.21843	0.21858	0.22418	0.21342	0.20858	0.16713	0.17647
	Emp	0.13733	0.13659	0.13798	0.13528	0.13025	0.1363	0.13577	0.13696	0.14215	0.14283
	K/L	0.23555	0.2059	0.18314	0.10167	0.14001	0.53663	0.13106	0.20602	0.10646	0.12175
	NVA	0.17119	0.16861	0.18026	0.1801	0.1684	0.18103	0.21371	0.2408	0.16617	0.1679
24	Units	0.17134	0.16715	0.16838	0.1641	0.16036	0.15217	0.15228	0.15955	0.16292	0.18659
	Prod K	0.16825	0.15887	0.16679	0.14757	0.14735	0.14261	0.1461	0.28733	0.13708	0.14633
	Emp	0.15891	0.14731	0.1574	0.15168	0.14565	0.13281	0.13925	0.14993	0.13908	0.14708
	K/L	0.08309	0.08295	0.08112	0.08721	0.09416	0.11351	0.09519	0.0965	0.07938	0.08747
	NVA	0.20555	0.16983	0.17586	0.16341	0.15479	0.13468	0.14103	0.18468	0.13968	0.1481
25	Units	0.33322	0.20808	0.32786	0.21972	0.23396	0.22517	0.24446	0.27623	0.2901	0.39893
	Prod K	0.41502	0.19306	0.56715	0.34427	0.51473	0.5009	0.51226	0.44096	0.31046	0.31112
	Emp	0.72135	0.70824	0.72921	0.71232	0.71074	0.6905	0.71171	0.69593	0.76072	0.81406
	K/L	0.21409	0.1437	0.23028	0.23702	0.16001	0.13424	0.24988	0.12825	0.17652	0.30369
	NVA	0.72277	0.68026	0.72672	0.76148	0.42001	0.69273	0.71452	0.67481	0.72676	0.83231
26	Units	0.17793	0.162	0.16621	0.17273	0.1657	0.17645	0.19171	0.2053	0.21982	0.20466
	Prod K	0.14244	0.1608	0.13741	0.1642	0.1431	0.15551	0.16156	0.15941	0.16365	0.14987
	Emp	0.15015	0.15905	0.14961	0.14216	0.16288	0.1805	0.18924	0.22722	0.21843	0.21369
	K/L	0.09402	0.10195	0.08182	0.08414	0.07638	0.08768	0.08676	0.11236	0.08152	0.09537
	NVA	0.16055	0.17124	0.18164	0.18366	0.1626	0.1843	0.19473	0.23123	0.17612	0.19651
27	Units	0.1058	0.09903	0.09801	0.10734	0.09849	0.10171	0.10252	0.09652	0.10461	0.10142
	Prod K	0.13288	0.11014	0.1121	0.13295	0.13437	0.1367	0.13931	0.13671	0.13198	0.20005
	Emp	0.10965	0.10105	0.10136	0.11081	0.11021	0.11861	0.10863	0.10223	0.11022	0.11081
	K/L	0.0655	0.07314	0.07875	0.08292	0.08224	0.07248	0.06909	0.11152	0.10218	0.09502
	NVA	0.12619	0.11503	0.12374	0.10648	0.219	0.14461	0.15671	0.14097	0.16692	0.18794
28	Units	0.13202	0.13023	0.12726	0.12774	0.12255	0.12927	0.12689	0.13082	0.13158	0.1284
	Prod K	0.45239	0.12583	0.09265	0.10429	0.09564	0.09192	0.10128	0.11446	0.1637	0.11562
	Emp	0.1016	0.1078	0.09587	0.09956	0.09892	0.09717	0.09552	0.10054	0.10052	0.1011
	K/L	0.20502	0.0709	0.13321	0.07175	0.19726	0.0905	0.08456	0.07694	0.08816	0.0715
	NVA	0.11555	0.1254	0.10361	0.12425	0.11056	0.10049	0.12018	0.14863	0.11928	0.12051
29	Units	0.33811	0.36396	0.32945	0.33652	0.37815	0.68268	0.41553	0.40327	0.40896	0.38474
	Prod K	0.25577	0.2442	0.30041	0.29846	0.33766	0.32236	0.31585	0.26517	0.28359	0.26182
	Emp	0.26658	0.2771	0.28442	0.30827	0.31623	0.34955	0.34794	0.36711	0.34707	0.31069
	K/L	0.08207	0.09799	0.14123	0.13342	0.13203	0.11872	0.09573	0.1062	0.16827	0.11839
	NVA	0.28098	0.2581	0.2969	0.23558	0.23453	0.33007	0.30993	0.40859	0.28846	0.27931
30	Units	0.12509	0.12184	0.11894	0.12302	0.12329	0.12072	0.1261	0.13412	0.13406	0.13507
	Prod K	0.16652	0.16327	0.1435	0.16736	0.18771	0.16408	0.1824	0.19356	0.1716	0.2193
	Emp	0.13864	0.13749	0.13213	0.14126	0.14427	0.13706	0.14008	0.14112	0.14564	0.14948
	K/L	0.08273	0.08256	0.07997	0.0822	0.07643	0.07561	0.06973	0.07397	0.08942	0.08673

	NVA	0.21869	0.19528	0.21754	0.23453	0.19534	0.14278	0.22596	0.25103	0.18502	0.2212
31	Units	0.12065	0.11296	0.11482	0.11227	0.11164	0.10929	0.10707	0.11338	0.10705	0.10767
	Prod K	0.09902	0.10629	0.09183	0.11354	0.12372	0.10203	0.12401	0.13003	0.13369	0.12911
	Emp	0.11255	0.10399	0.1032	0.10104	0.09745	0.09706	0.09598	0.09727	0.09272	0.09635
	K/L	0.10184	0.10833	0.1887	0.09635	0.08572	0.08748	0.09724	0.0794	0.07981	0.07251
	NVA	0.13947	0.15076	0.14496	0.1196	0.15985	0.11965	0.17227	0.17474	0.18279	0.16464
32	Units	0.09703	0.09541	0.09573	0.09612	0.09344	0.09354	0.09365	0.09489	0.09523	0.09557
	Prod K	0.10541	0.11283	0.1223	0.12074	0.11752	0.11418	0.11324	0.10931	0.10719	0.10572
	Emp	0.0838	0.08224	0.08338	0.08352	0.08387	0.08246	0.08262	0.083	0.0837	0.0826
	K/L	0.1101	0.12384	0.09885	0.08784	0.09266	0.08964	0.10148	0.08619	0.08786	0.08289
	NVA	0.08782	0.09555	0.08704	0.09961	0.09918	0.10061	0.09075	0.10067	0.10015	0.09886
33	Units	0.09219	0.09296	0.09233	0.09337	0.09305	0.0913	0.09032	0.0935	0.09089	0.09043
	Prod K	0.18492	0.17692	0.16707	0.17381	0.17937	0.15378	0.13427	0.11856	0.1202	0.11224
	Emp	0.11626	0.11485	0.11686	0.11338	0.11656	0.10837	0.11186	0.10771	0.10416	0.102
	K/L	0.08721	0.10042	0.09045	0.08868	0.11665	0.10478	0.10141	0.08208	0.07816	0.08103
	NVA	0.14309	0.14147	0.16986	0.15757	0.15722	0.13684	0.11954	0.15301	0.15355	0.13196
34	Units	0.10968	0.11052	0.10838	0.10978	0.10657	0.10268	0.10655	0.11422	0.10947	0.11435
	Prod K	0.13504	0.15834	0.15295	0.13201	0.1643	0.14402	0.15925	0.23665	0.16961	0.21318
	Emp	0.13141	0.12826	0.12373	0.10974	0.11484	0.10416	0.11896	0.13182	0.1238	0.1301
	K/L	0.0702	0.06572	0.06754	0.06522	0.06887	0.0668	0.07878	0.07519	0.10308	0.07713
	NVA	0.21889	0.22995	0.25511	0.15799	0.15324	0.14207	0.15582	0.20056	0.19173	0.18211
35+36	Units	0.12585	0.11958	0.11505	0.11611	0.11637	0.11469	0.12042	0.11994	0.1161	0.12241
	Prod K	0.1124	0.11153	0.11591	0.11649	0.11503	0.11072	0.14462	0.12568	0.12653	0.1282
	Emp	0.11219	0.10973	0.10687	0.10869	0.10837	0.1049	0.11099	0.11138	0.10963	0.12493
	K/L	0.06536	0.06621	0.06362	0.06382	0.06702	0.06889	0.06658	0.06938	0.0754	0.09411
	NVA	0.12938	0.11997	0.12578	0.13737	0.13938	0.12994	0.14295	0.1423	0.13799	0.16305
37	Units	0.12824	0.13111	0.12841	0.13006	0.13054	0.13312	0.13176	0.13006	0.12466	0.12553
	Prod K	0.16594	0.15969	0.14721	0.16424	0.14825	0.14883	0.15933	0.16046	0.15239	0.18263
	Emp	0.12752	0.12149	0.1286	0.11557	0.11929	0.12181	0.11433	0.11623	0.11512	0.11343
	K/L	0.11657	0.0908	0.08322	0.08325	0.096	0.10115	0.08779	0.09354	0.08965	0.09376
	NVA	0.16842	0.18016	0.18336	0.14316	0.12715	0.14915	0.16274	0.15903	0.18494	0.2227
38	Units	0.17137	0.15722	0.16701	0.15998	0.14398	0.15175	0.14993	0.14539	0.17007	0.18407
	Prod K	0.10965	0.14057	0.14893	0.14141	0.11211	0.13539	0.14494	0.16337	0.15082	0.16681
	Emp	0.12312	0.11919	0.12864	0.12855	0.11633	0.13874	0.12548	0.13147	0.13382	0.14244
	K/L	0.07266	0.12551	0.0766	0.08005	0.08313	0.08021	0.07428	0.0814	0.07658	0.07571
	NVA	0.16723	0.17176	0.13518	0.14101	0.13132	0.17651	0.19589	0.21991	0.18212	0.18639
40	Units	0.11644	0.11952	0.12266	0.13073	0.15733	0.11206	0.27751	0.10108	0.10761	0.17018
	Prod K	0.09856	0.09179	0.10171	0.09484	0.10336	0.10751	0.09853	0.10373	0.09413	0.09884
	Emp	0.07673	0.08053	0.08466	0.07933	0.08186	0.07884	0.07866	0.07895	0.08549	0.09709
	K/L	0.06926	0.07201	0.07557	0.07289	0.07511	0.1617	0.1243	0.12312	0.08014	0.08889
	NVA	0.10038	0.11796	0.12601	0.14569	0.11475	0.12981	0.09735	0.11608	0.11536	0.10456
41	Units	0.15292	0.81557	0.11983	0.14439	0.13322	0.14411	0.15077	0.1856	0.13048	0.14813
	Prod K	0.18849	0.18412	0.22731	0.17177	0.17305	0.19896	0.35095	0.3747	0.3922	0.27627
	Emp	0.17676	0.77993	0.12217	0.15631	0.15762	0.16826	0.16812	0.15711	0.14961	0.18152
	K/L	0.18353	0.1963	0.16327	0.13336	0.15341	0.14189	0.40826	0.26074	0.21634	0.2
	NVA	0.22636	0.2504	0.2515	0.19502	0.18129	0.18456	0.57394	0.49874	0.27629	0.2987

Table: C.5.9: CV Results for Small States for 10year period, 1959-65

		59-60	60-61	61-62	62-63	63-64	64-65	65-66
Indus	Var							
20+21	Units			0.4041			0.4041	0.4330
	Prod K			6.9937			6.6094	5.2664
	Emp			3.4451			6.6851	3.1316
	K/L			6.9937			6.6094	6.5921
	NVA			7.0743			7.4749	5.8924
25	Units				3.2636	4.9497	2.5456	3.4939
	Prod K	7.6034			7.2796	7.3861	2.7791	4.4732
	Emp				7.2838	4.6031	3.3431	3.9062
	K/L				0.0158	7.3861	0.6475	0.7486

	NVA				7.8439	7.7390	5.0696	4.9045
27	Units							3.3941
	Prod K	3.7919						4.5162
	Emp	1.0285						1.7194
	K/L	0.0814						3.1349
	NVA	3.9466						3.9268
28	Units							6.3640
	Prod K	3.2028						8.2854
	Emp							8.0551
	K/L							3.1522
	NVA							8.2891
33	Units				5.3033			
	Prod K	1.6455			5.9794			
	Emp				6.8063			
	K/L				5.9794			
	NVA				7.1083			
34	Units					8.5863	6.7297	6.8943
	Prod K	3.0410				9.8437	6.9870	7.0938
	Emp					9.8375	7.7680	7.7044
	K/L					0.0188	3.1726	7.0938
	NVA					10.3393	7.8906	7.8863
37	Units						4.7960	4.7960
	Prod K	6.4755					4.1443	4.1183
	Emp						4.6537	4.6730
	K/L						0.6957	0.7570
	NVA						6.7404	5.9459

TableC.5.10: CV Results of Smaller States and UT for 1966-75

Indus	Var	66-67	67-68	68-69	69-70	1970-71	73-74	74-75
20+21	Units	2.0203	3.2636	2.4244	2.5283	1.6971	2.6101	2.9110
	Prod K	4.5182	4.6478	7.5368	4.3935	6.5643	4.5515	2.9552
	Emp	3.1175	1.6297	4.9108	3.8857	4.2184	5.2679	2.5778
	K/L	1.7414	3.3729	5.4039	0.7931	3.8119	6.2159	0.6942
	NVA	7.7009	6.7603	8.0031	6.4263	7.7244	5.3491	3.9295
23	Units	3.4939	3.1262	1.9428		3.3203		6.8389
	Prod K	2.0455	3.0295	7.5155		1.2173		3.7220
	Emp	3.5622	3.2054	6.6691		3.5749		2.1744
	K/L	1.6875	1.0033	2.7855		2.5093		1.7436
	NVA	5.0069	4.7597	2.1034		5.4309		1.9767
24	Units							7.3282
	Prod K							5.3188
	Emp							5.2667
	K/L							0.0852
	NVA							5.6337
25	Units							7.0835
	Prod K							4.5204
	Emp							3.7206
	K/L							0.9144
	NVA							3.8052
27	Units	4.2426	2.7714		4.7140	3.8569	3.6365	3.4693
	Prod K	1.7256	1.0750		2.3361	7.0898	2.7975	2.6158
	Emp	2.2322	1.2550		1.6848	5.7369	1.0440	2.6322
	K/L	0.5352	0.3250		0.6890	1.1095	2.8366	0.6641
	NVA	6.8099	3.5822		2.9197	3.3901	1.1949	4.1508
28	Units						2.1213	2.0334
	Prod K	4.9280					1.0666	3.7137
	Emp						1.0575	3.0604

	K/L						1.1241	1.2266
	NVA						1.6768	4.7999
31	Units						4.4922	3.4878
	Prod K						8.4022	4.0258
	Emp						7.2643	4.4177
	K/L						7.4721	4.4033
	NVA						8.1014	1.9936
32	Units						4.2426	5.0096
	Prod K						3.0017	6.6723
	Emp						1.2983	6.2489
	K/L						1.8009	2.4438
	NVA						2.6966	6.5056
34	Units	5.0387	6.8943					4.0748
	Prod K	5.9567	7.3076					4.8625
	Emp	5.5924	6.3469					4.4435
	K/L	0.9622	2.6998					1.4073
	NVA	6.1769	7.1734					5.3891
35+36	Units	7.4246					6.5641	5.2311
	Prod K	5.2816					2.0831	6.6604
	Emp	7.5006					5.5639	6.6045
	K/L	4.9333					4.1486	1.1218
	NVA	5.0746					1.8328	8.0180
37	Units	4.0855	5.4393	4.8487	4.4271	4.8954	6.3640	3.6774
	Prod K	3.6578	3.7037	1.2822	1.4778	4.0700	3.8425	5.0069
	Emp	4.0512	4.7288	3.2543	2.2394	3.7370	5.6900	5.2303
	K/L	0.4954	1.3546	1.2822	3.5539	0.4222	2.6533	0.5724
	NVA	5.9097	5.2141	2.8940	1.4410	6.0003	5.5880	5.5827
40	Units			1.6971	1.6971		3.3941	
	Prod K			2.2085	1.2096		8.4684	
	Emp			5.4114	5.1278		8.1830	
	K/L			6.5351	5.8347		7.6033	
	NVA			3.6753	8.3306		8.4418	

Table: C.5.11: CV Results of Smaller States and UT for 1976-85

Indus	Var	76-77	77-78	79-80	80-81	81-82	82-83	83-84	84-85	85-86
20+21	Units	2.05796	2.09504	2.03746	1.774	1.96176	1.77791	2.37932	1.75843	1.936762
	Prod K	3.20488	2.94833	3.86281	3.00722	3.13052	3.37401	3.56176	3.36958	3.3692226
	Emp	2.15785	2.01483	2.3799	2.02571	2.2249	2.20871	2.73999	2.28569	2.6224583
	K/L	0.9114	0.86972	1.45274	0.90873	0.90987	1.09313	1.08207	1.24012	2.7025793
	NVA	2.02915	2.8229	4.2942	3.0332	2.98171	3.21685	2.54687	3.80361	3.6015677
22	Units	1.9399	1.91213	3.33631	1.33394	3.19079	3.10085	2.71169	1.37216	3.3609401
	Prod K	1.23225	3.08414	2.30926	2.27817	1.79095	1.71451	2.14215	1.77879	3.7154185
	Emp	3.8891	3.71506	2.29145	3.23516	2.75944	2.21085	3.0362	2.12463	4.032868
	K/L	3.20737	2.64502	2.55063	2.64311	2.417	2.03871	2.3316	1.75812	1.1196173
	NVA	5.896	4.2699	3.48827	2.74391	2.77917	3.33269	2.39321	2.98023	2.9546322
23	Units	2.79622	2.82843	3.29021	3.76219	2.63272	2.94847	1.99654	3.52668	3.5876331
	Prod K	2.97664	2.43232	0.04315	1.80802	3.51793	3.56073	4.27469	4.2664	3.1214742
	Emp	3.67142	1.66783	1.74299	3.39684	3.46292	3.48447	4.83545	4.11587	5.5169169
	K/L	3.25634	0.81014	1.78428	5.22879	1.24839	1.71474	0.78658	1.10233	4.1422429
	NVA	6.88417	1.8283	0.90802	0.75259	3.96588	3.30119	3.45829	3.17146	4.1002472
24	Units	7.10929	5.06525	2.93418	3.68279	4.7	3.8877	5.04341	6.59966	6.8429689
	Prod K	1.8912	3.97382	4.64348	2.94779	2.29767	2.65558	4.62081	1.94697	1.9472482

	Emp	3.47262	3.9403	4.11289	3.10272	3.20959	3.50414	3.68474	3.43291	3.4122587
	K/L	1.74015	2.00921	1.79168	1.23713	1.28419	1.017	1.83755	1.638	1.6139541
	NVA	2.344	3.3229	3.40982	2.97755	2.92538	3.98038	5.44094	5.75153	1.4715156
25	Units	4.84019	2.32836	2.09912	2.25739	3.2993	3.12483	2.72741	3.34907	3.8439401
	Prod K	5.04297	3.74879	1.48867	2.74541	4.10897	3.72421	4.65905	5.43303	4.9822215
	Emp	2.78131	2.82083	3.19323	3.17231	2.8803	3.07002	4.72813	3.03142	3.7320825
	K/L	3.36448	2.37522	2.94858	4.16575	2.22899	2.60944	2.23566	2.26762	3.7772508
	NVA	4.31216	1.91876	1.34985	0.99486	2.62503	2.1591	2.64792	2.40473	2.8571007
26	Units	8.21483	8.25595	6.63874	6.59803	6.64041	6.494	6.49324	5.45013	6.4022989
	Prod K	8.34111	8.41644	1.68175	6.76335	6.87621	6.77994	6.39589	5.44176	5.9627901
	Emp	8.35817	8.38001	3.52943	6.54552	6.67189	6.47547	6.41936	5.59317	6.3453144
	K/L	1.03771	1.78376	4.81429	2.20786	3.79132	3.57193	3.18734	3.05027	2.6834496
	NVA	8.41245	8.4386	6.46244	6.72327	6.84505	6.73207	6.70059	5.77304	6.5599051
27	Units	2.02224	1.89302	1.85979	1.14942	1.39651	1.64038	1.43655	1.5448	1.2811604
	Prod K	2.66212	2.80434	2.07001	2.15861	3.16956	3.27562	2.86463	3.59887	3.4685855
	Emp	2.71752	2.70353	2.13575	2.0576	2.60543	2.91608	2.53076	3.11359	3.4496283
	K/L	1.27327	1.27426	0.88237	0.67236	0.93336	0.73558	0.78955	1.14177	1.1062764
	NVA	2.72776	2.7898	3.54087	3.22634	2.63102	3.4508	3.10958	2.56953	2.8882117
28	Units	3.47494	3.67686	3.0058	3.48895	3.28761	3.19847	3.23279	3.19113	3.2389507
	Prod K	3.52095	3.54711	2.84787	3.0271	3.07027	3.02443	3.20146	3.21943	3.367246
	Emp	3.31142	3.30847	2.73958	2.94454	2.97616	2.95306	2.96055	2.75184	2.8476912
	K/L	0.8545	0.96341	1.56381	1.20475	1.20322	1.15595	1.11733	1.19744	1.1923605
	NVA	3.51226	3.5572	4.01155	3.42728	3.43863	3.31295	3.08781	3.19949	3.0086506
29	Units				7.46021				5.09117	3.4939394
	Prod K				8.20244				6.7555	5.8855356
	Emp				7.98887				4.41723	5.6949732
	K/L				2.37597				3.9933	0.3565428
	NVA				8.17566				6.8215	6.7719073
30	Units	5.49867	5.38335	3.60094	4.79707	3.78573	3.5766	3.99314	3.49688	3.8101968
	Prod K	3.8105	3.32538	4.71442	4.1643	3.94468	3.50728	3.50876	3.82131	3.934964
	Emp	4.54899	4.05106	3.97998	4.87175	3.28778	3.52331	3.78911	3.3396	3.6098835
	K/L	3.65344	2.13922	2.84803	2.80962	2.70019	3.86867	2.49723	3.76533	4.0624973
	NVA	3.33141	3.351	3.04828	3.44655	2.8502	3.29591	3.25943	3.33748	3.6203363
31	Units	4.6099	4.79228	3.36838	4.61478	5.07705	4.96112	4.57229	4.36117	5.0499587
	Prod K	5.07338	4.81949	4.87711	4.65016	3.35108	3.36005	3.18235	3.07645	3.2607878
	Emp	5.06279	5.03617	3.4356	3.85394	3.98312	3.72992	3.84803	3.31902	4.097618
	K/L	6.35123	6.26639	2.73983	4.4871	1.79221	2.96305	1.53354	1.86677	1.4538749
	NVA	3.42852	3.4676	5.21824	4.1978	4.05802	4.08882	3.38253	3.4049	3.7321153
32	Units	2.84544	3.4892	4.42699	2.37622	2.65963	3.02331	2.75833	2.72795	2.5467229
	Prod K	3.07521	3.13301	3.62804	2.09183	2.57997	2.51699	2.30104	2.22922	1.7068807
	Emp	6.1713	3.6331	4.6211	3.6576	2.84417	3.13913	2.90109	2.40085	2.4688495
	K/L	2.77313	3.33712	3.17166	3.1856	2.85256	2.53632	2.3523	2.1728	1.9670457
	NVA	6.30433	3.6841	3.2069	2.19139	2.43332	1.76507	2.26314	2.53107	1.6927609
33	Units	5.29506	5.30064	4.1216	4.36697	4.33781	4.30162	4.42008	4.77448	5.066847
	Prod K	5.13666	5.1827	5.34465	4.21517	4.02463	3.63073	3.08338	3.19565	3.2559174
	Emp	5.38596	5.38764	4.85387	3.81022	3.67814	4.04522	4.07678	4.56786	4.9441612
	K/L	1.17608	1.30634	1.43074	4.73059	4.719	4.86895	4.54091	4.92865	5.7459399
	NVA	5.6592	5.6245	3.93085	4.88628	4.30519	3.13482	3.93823	2.86108	3.2637443
34	Units	4.48375	4.51864	3.10827	4.23955	4.20066	4.22437	3.49678	3.37585	3.8494396

	Prod K	4.58753	4.13126	3.84931	4.79525	4.22054	4.27765	3.98291	3.7171	4.1230519
	Emp	4.26636	4.00924	3.52789	4.14788	4.15843	4.32265	3.72764	3.56139	4.0689456
	K/L	0.49831	2.96216	0.64696	1.99428	1.37897	0.75548	1.01293	0.95729	1.7014411
	NVA	4.40113	4.7652	4.99075	4.48372	4.23265	4.24448	3.84597	3.64081	4.2334296
35+36	Units	5.28959	6.4501	3.25529	5.42106	5.38626	5.30969	4.64654	4.66259	5.1054762
	Prod K	3.41108	6.29386	4.88119	5.2185	5.24507	5.43881	4.60986	4.74185	5.10129
	Emp	4.40282	6.41987	3.94113	5.83219	5.22701	5.39809	4.7767	4.75695	5.2056689
	K/L	0.96655	0.6726	1.40937	1.52725	0.3952	1.46577	1.95107	0.94568	1.6535632
	NVA	3.87142	6.2664	4.30466	5.10818	4.51238	5.52502	4.87832	4.6845	5.2923077
37	Units	4.5943	4.48909	3.33311	4.15146	4.0566	4.67997	4.60817	4.70684	5.8870419
	Prod K	2.65449	2.65497	4.38238	3.47218	3.20376	3.35323	2.83805	3.27994	3.7027906
	Emp	3.27462	3.14778	4.13658	2.97031	3.13312	3.33668	3.15587	3.31964	4.5497682
	K/L	0.87906	0.79397	0.51526	1.27898	0.97474	1.27253	1.75993	1.47023	2.5488975
	NVA	4.65251	2.9361	4.2366	3.41357	4.33432	3.24356	3.30735	3.18389	3.4734739
38	Units	2.1166	2.1166	3.41375	5.29417	6.02073	5.00601	6.3469	4.94919	2.8723632
	Prod K	6.33061	6.33427	3.67147	4.72033	4.71523	3.01046	3.09485	2.784	2.0510196
	Emp	5.83162	5.96465	2.32344	5.21991	3.87153	2.36307	2.2283	3.11914	1.6868373
	K/L	3.07481	2.96756	2.68097	3.24867	1.22426	3.94141	2.59486	2.59886	1.2166876
	NVA	6.42316	8.39957	4.35221	4.64396	5.98333	2.89885	3.03157	3.09949	1.9149503
40	Units	3.0246	2.1166	1.06588	1.02333	1.11555	1.20082	1.66277	2.06534	2.0330601
	Prod K	2.82139	6.33427	6.7281	2.22803	5.02562	4.93629	4.83768	6.87493	4.3335396
	Emp	2.59766	5.96465	6.35368	2.7598	4.16164	4.18125	3.87855	6.53082	1.0310847
	K/L	0.91575	2.96756	3.15068	1.16968	2.14273	2.11413	2.23158	4.68357	3.9401225
	NVA	2.71159	6.2887	6.48656	2.64691	4.13131	4.27039	3.90423	6.40852	2.348173

Table: C.5.12: CV Results of Smaller States for 1986-95

Indus	Var	86-87	87-88	88-89	89-90	90-91	91-92	92-93	93-94	94-95	95-96
20+21	Units	1.69488	1.7074	1.94058	1.74198	1.5529	1.89065	1.50565	2.02298	1.7027491	1.2676432
	Prod K	3.60689	2.8001	2.81439	2.82487	2.58117	2.89469	2.45568	2.31222	3.0198164	2.1602633
	Emp	2.86368	2.42508	2.10454	2.22407	2.20985	2.28304	2.07118	2.1349	2.252343	1.956338
	K/L	1.04403	0.71364	1.45504	0.77777	1.40316	1.47008	0.98157	1.34482	0.9739113	0.8478414
	NVA	3.05473	3.1802	2.56483	2.37479	2.22462	1.49975	2.07699	2.5444	3.3960547	2.2322903
22	Units	3.1945	2.36373	1.936	4.64373	4.49501	4.97694	5.10291	4.15667	4.1850696	3.9589733
	Prod K	2.51314	2.31652	3.46923	3.654	1.69275	2.8569	3.22248	4.50734	2.8090886	2.8013555
	Emp	3.99701	3.19031	3.73257	4.11285	3.6062	3.61601	3.89294	4.29336	3.6738314	2.0399507
	K/L	1.48183	1.28342	1.53394	1.0563	2.80648	1.68628	2.10682	1.45199	2.5116995	1.9173666
	NVA	3.86877	3.6939	2.40088	2.11134	3.63485	2.40549	3.24643	3.30703	3.1523708	4.4561589
23	Units	2.57164	3.08157	2.18193	2.12132	2.02031	2.07418	2.94387	3.7913	3.7335238	1.4974026
	Prod K	3.84262	4.43631	8.24947	5.2329	5.30867	7.53229	5.63587	5.36554	3.5645194	6.2188631
	Emp	3.31084	3.26943	4.02393	0.62082	0.50469	0.60231	1.2885	1.758	1.9106626	3.5320106
	K/L	2.99599	4.71496	8.40042	4.83002	4.98965	7.39601	4.83502	4.15141	1.8266417	3.8663682
	NVA	3.31941	3.35539	5.87477	2.45797	2.08361	4.19299	2.69165	3.93806	4.0516366	2.0106204
24	Units	3.4679	7.07107	3.50219	2.0131	3.51115	3.53553	2.21659	1.88283	2.1265823	2.695502
	Prod K	3.547	2.82843	5.29495	3.42958	8.14472	7.92683	3.64516	4.22082	3.2309123	3.7058499
	Emp	2.92736	4.9129	2.72563	3.64967	3.77997	3.54573	4.34151	4.21767	4.3528976	3.5877518
	K/L	2.8322	2.58298	3.12165	3.17326	7.62527	7.18645	4.90861	4.41801	3.9007124	3.2119308

	NVA	3.97886	5.2171	4.59408	7.10659	7.72029	7.14597	2.48877	5.54679	4.6255171	4.2900346
25	Units	3.01977	5.07632	2.84206	2.06721	2.76573	2.80486	2.58023	2.83706	2.930053	2.0964523
	Prod K	3.69481	3.63237	6.77221	4.33124	6.72669	7.72956	4.64051	4.79318	3.3977159	4.9623565
	Emp	3.1191	4.09117	3.37478	2.13524	2.14233	2.07402	2.81501	2.98783	3.1317801	3.5598812
	K/L	2.9141	3.64897	5.76104	4.00164	6.30746	7.29123	4.87182	4.28471	2.8636771	3.5391495
	NVA	3.64913	4.28624	5.23443	4.78228	4.90195	5.66948	2.59021	4.74243	4.3385769	3.1503275
26	Units	6.33679	4.67866	6.53794	3.83078	3.70193	3.95236	4.13606	4.20864	4.277809	6.3535759
	Prod K	6.21424	4.80141	6.82133	4.34475	3.82125	4.40539	5.03892	4.59142	4.6358092	6.4561402
	Emp	6.1819	4.86367	6.70724	4.14635	3.66624	3.82848	4.25972	4.49075	4.3790959	6.0897857
	K/L	3.03801	1.53678	2.10721	2.0061	2.20617	2.7309	1.53972	1.05973	1.5615774	2.3053558
	NVA	6.61351	5.14357	6.88382	5.85282	6.9006	6.67444	6.68988	6.81407	6.8244834	6.6173191
27	Units	1.38608	1.49653	1.44192	1.23738	1.22207	1.30683	1.24526	1.57982	1.2601676	1.8777527
	Prod K	3.07357	2.97379	2.71609	2.30611	2.76315	2.60347	2.50411	2.74926	2.5469528	2.8200692
	Emp	2.95139	2.91246	2.77065	2.26228	2.34762	2.45487	2.01461	2.18501	2.2567161	2.8073391
	K/L	0.72173	0.91699	1.26155	0.68947	0.7675	0.84072	0.89832	0.9597	0.9481094	1.0240647
	NVA	2.2018	2.7474	2.28029	1.42894	2.64407	3.22742	2.25035	2.60348	2.7965046	2.2237688
28	Units	3.20099	3.87727	3.21562	2.9331	2.71893	2.75566	2.82657	2.54309	2.6741104	2.2371381
	Prod K	3.58206	4.28275	3.56431	2.8223	2.77943	2.56017	2.23204	2.88761	3.0382792	2.6928665
	Emp	2.89248	3.778	2.93413	2.68981	2.42046	2.41527	2.5465	2.64643	2.6121769	2.3792739
	K/L	1.34595	0.71819	1.14007	1.05867	1.46196	2.12755	1.84267	1.28127	1.5962767	1.282126
	NVA	2.89089	4.43638	3.37755	3.63875	2.69049	3.56297	3.26099	3.61459	4.3468193	2.8697335
29	Units	3.63655	4.62834	2.82843	5.20066	2.82843	3.34269	2.99481	4.63584	3.4712515	2.3535534
	Prod K	1.15063	1.68123	2.19763	3.65404	2.2404	3.26357	4.67935	4.82484	7.5860104	4.9836777
	Emp	1.51701	1.22252	1.35617	3.64792	1.16378	1.10102	6.88274	2.92474	1.9399394	1.0468158
	K/L	1.66237	2.82316	2.52633	1.0075	3.28521	3.1771	7.98864	2.91716	7.9093272	5.6230568
	NVA	1.51842	6.32648	3.47535	7.21737	6.44052	7.29017	3.32728	5.14916	7.4525408	1.1678407
Indus	Var	86-87	87-88	88-89	89-90	90-91	91-92	92-93	93-94	94-95	95-96
30	Units	3.18096	3.58079	3.44964	2.67483	3.79155	3.99342	3.76089	3.53307	3.568732	2.3154332
	Prod K	3.56392	3.44084	2.67159	2.674	4.32896	5.05851	4.17033	4.25008	4.3116229	1.9498913
	Emp	2.89846	3.30841	3.05383	2.56834	3.78576	4.12544	3.856	3.79424	3.6615583	1.8573871
	K/L	2.90233	2.77059	2.06643	1.73632	1.39996	2.24462	1.07228	1.58242	1.249593	1.0937604
	NVA	3.95938	2.79933	4.60179	2.56585	2.54573	2.66412	2.18176	3.02976	2.4001602	3.3701296
31	Units	4.23836	4.24741	3.6851	2.56585	3.41958	3.44452	3.41774	3.45027	3.0933911	3.0724587
	Prod K	2.94866	3.23363	2.3527	4.05931	5.05922	4.84308	4.30842	4.92877	4.4903922	2.9085334
	Emp	3.57791	3.8121	3.10187	2.52291	3.48735	3.5953	3.57646	3.62024	3.4176177	2.867957
	K/L	0.79767	0.86323	0.83824	3.51812	2.33678	1.59062	0.96301	2.28577	1.7176139	2.1057132
	NVA	3.34185	3.24739	2.86939	1.0167	2.85643	3.1912	3.41832	3.1328	3.1102114	2.7983004
32	Units	2.8481	2.66679	2.54946	2.83673	3.67266	2.30217	2.13522	3.13619	3.2617755	1.250758
	Prod K	2.30548	1.67158	2.97576	2.03085	3.25781	2.21086	2.15804	2.35894	2.4719879	2.4237203
	Emp	3.31184	3.00258	2.66991	2.92743	3.84258	2.11674	1.91785	3.26952	3.2804607	1.2606755
	K/L	2.7294	3.15397	3.58424	2.30308	2.55769	1.80031	1.26256	2.35151	2.1916059	1.952004
	NVA	2.012	2.34688	1.90059	2.81796	3.2527	2.829	2.439	1.7392	1.938578	1.1905807
33	Units	4.32367	4.41751	4.18579	4.03241	3.48932	4.62523	4.15318	3.02149	3.3424334	3.4354397
	Prod K	3.00305	2.9525	2.31913	2.06812	4.66796	2.32456	2.24622	4.06628	4.6836232	1.4527423
	Emp	4.22934	4.18146	3.72386	3.11841	4.08738	3.90321	3.06909	3.65981	4.2255848	2.2577603
	K/L	4.57222	3.93063	3.67485	2.29199	1.75541	1.96084	1.68583	1.61712	1.4300788	2.9676246
	NVA	2.57097	4.09002	2.82057	2.16503	2.86769	2.67302	2.46224	1.62327	1.9713591	1.9656919
34	Units	3.66561	3.55605	3.24322	3.2827	2.91926	3.70339	3.74262	2.86122	2.7203972	3.0275854
	Prod K	3.88774	4.31233	3.90576	3.61325	3.01533	4.48824	4.45866	3.99115	2.7740042	2.3638014

	Emp	3.74863	3.74202	3.41597	3.26048	3.30364	3.9393	3.99049	3.56106	3.0412413	2.9866902
	K/L	1.04104	2.56238	1.01385	1.20519	2.31872	1.50107	1.88017	1.72126	1.1038997	1.7404372
	NVA	4.25663	4.16142	3.61028	3.72366	3.10281	4.34405	4.34638	3.76234	2.8223402	2.2658513
35+36	Units	5.03065	4.55259	4.53296	4.44848	3.19337	4.47295	4.11878	2.94272	3.0723479	4.0836428
	Prod K	5.15794	4.42547	4.54139	4.08679	4.56486	3.74554	3.52587	4.02364	4.3158213	2.7667043
	Emp	5.21123	4.65481	4.69511	4.63605	3.77671	4.47002	4.14426	3.59429	3.8150416	3.8705462
	K/L	1.97702	2.43841	1.472	1.33324	1.40478	1.7835	1.64534	1.07567	1.6766729	1.4383554
	NVA	5.10156	4.70884	4.8064	6.04191	4.56689	4.12109	4.08494	3.71442	4.1319086	2.3043877
37	Units	5.05777	5.29662	4.63688	4.71501	3.13416	2.94016	3.16821	3.3777	3.1256155	4.4870843
	Prod K	3.29959	3.84779	3.03594	3.13417	4.59409	3.37193	3.77381	3.7203	3.287363	3.9140482
	Emp	3.47182	4.17225	3.61631	3.8924	4.11945	3.83902	4.13001	4.41555	3.9826546	3.4814199
	K/L	2.16643	3.6931	2.54587	1.98519	1.51232	2.15411	1.92899	2.10876	1.878364	2.5881448
	NVA	3.08991	3.69276	3.37207	3.79607	4.09372	3.87305	4.32686	4.4394	4.4447533	3.4139579
38	Units	2.95743	3.02454	2.51803	2.16105	2.19392	2.12112	2.19375	2.20813	2.1724497	2.0973563
	Prod K	2.3938	2.17064	1.74346	1.84716	2.93317	2.53295	2.58781	2.66543	3.1011143	1.8562009
	Emp	1.80911	1.56869	1.47241	1.20423	1.78645	1.74768	1.86384	1.87881	1.9856804	1.36814
	K/L	2.17535	1.51571	2.03629	2.80008	1.31248	1.48527	1.14617	1.24545	1.08231	1.1453455
	NVA	2.36008	2.15836	1.45402	2.03448	1.71281	1.68939	2.00676	1.8634	1.6446143	1.68549
40	Units	2.81012	2.65479	2.80123	2.48233	1.88847	2.35966	2.19916	4.64948	2.4070901	2.2029947
	Prod K	1.9936	4.86525	2.47885	2.75216	3.78148	4.80975	4.75718	5.28381	4.0697243	4.0872984
	Emp	1.89642	1.18849	1.98905	1.8454	3.97991	4.52932	4.31372	4.74197	3.8044469	2.8797562
	K/L	1.11441	4.67457	2.82181	1.58346	2.40256	1.88515	2.26678	2.57107	1.5229121	1.4926089
	NVA	1.89687	4.33838	1.52196	1.4143	4.14312	4.35104	1.4853	2.96059	1.949949	1.8252934

Table: C.5.13: CV Results for Large States for 10year period, 1959-65

Ind	Var	59-60	60-61	61-62	62-63	63-64	64-65	65-66
20+21	Units	1.0586996	1.0235138	0.9969833	1.0777361	1.0295998	0.9570715	0.9130178
	Prod K	1.3161512	1.252145	4.2278787	1.1812573	1.3616063	1.0534148	1.0591568
	Emp	1.0730993	1.0807062	1.1569362	1.1126458	1.1148567	1.0473142	1.0426359
	K/L	0.7715964	0.5342659	2.7062632	0.6550674	0.732353	0.563067	0.5248892
	NVA	1.2866419	1.1026742	1.1192225	1.0238928	1.046576	0.9525036	0.8555388
22	Units	1.9139733	1.9783272	1.9905178	2.2379332	3.8480969	2.6656506	2.6496304
	Prod K	1.4716733	1.6019784	1.4801432	1.985129	2.3611727	1.8838119	1.8381916
	Emp	2.7024979	2.8646032	2.9749372	4.1109981	4.7622596	3.8275178	3.7357169
	K/L	1.1937446	4.3259139	1.013679	4.6565189	1.9939672	1.6330719	1.4001017
	NVA	1.488385	1.5390247	1.6849503	1.9585044	4.668098	1.8432361	1.7248889
23	Units	1.3910398	1.3829536	1.3261693	1.1819169	1.4068274	1.1417898	1.3010814
	Prod K	1.6693462	1.629577	1.5306848	1.7197121	1.667887	1.4588585	1.4573345
	Emp	1.6505994	1.6108429	1.4692171	1.6982582	1.7604541	1.6153789	1.597272
	K/L	0.4532642	0.4347587	0.4982781	0.4202477	1.667887	0.8058916	0.4967821
	NVA	1.7917404	1.5636395	1.7062684	1.7166013	1.6175252	1.5705423	1.6799405
26	Units	1.4838886	1.4453572	1.5045842	1.5455746	1.4885041	1.3396537	1.3862159
	Prod K	1.3073492	1.3365218	1.4313529	1.5586437	1.5571456	1.5565806	1.7355502
	Emp	1.5011795	1.4513314	1.7447329	1.7206332	1.6940963	1.5842059	1.3496315
	K/L	0.7349101	0.6172795	0.8362273	0.7066267	0.4408823	0.5587301	0.6267006
	NVA	4.3132651	1.3137144	2.5797069	1.3049219	1.5319866	1.6649895	1.5586892
27	Units	1.8684302	1.714501	1.4334419	1.3520738	1.3504649	1.0811788	1.0139182
	Prod K	1.6251216	1.8628782	2.127807	1.9095128	2.4456357	1.8544877	1.7581129
	Emp	1.4454568	1.5849388	1.522674	1.496089	1.4866969	1.2602662	1.1712698
	K/L	0.7947347	0.9016649	0.9792562	0.7787642	1.6532384	0.7129775	0.6514193

	NVA	3.9415481	2.2630567	2.4389429	2.4482665	2.0365256	2.1177509	2.0067963
28	Units	1.4575252	1.4583208	1.4892399	1.6318028	1.4924345	1.4852236	1.5517098
	Prod K	1.4145257	1.1884671	1.4193883	1.1213162	1.2302985	1.0399289	1.103797
	Emp	1.4000148	1.2704139	1.4629771	1.4262712	1.3267403	1.3319472	1.330399
	K/L	1.0094711	0.7556367	0.5546809	3.9561915	0.7269154	1.0505659	0.9653114
	NVA	1.6632609	1.4302956	1.7812134	1.571866	1.4859902	1.4678547	1.161358
29	Units	3.1546459	4.2572218	4.814257	4.630017	3.5404238	3.43327	3.64825
	Prod K	4.0606322	5.0317229	7.3793813	8.987846	4.754075	4.3867069	4.1809562
	Emp	4.0806933	4.2546293	4.6728248	4.53874	4.7847314	4.4395399	4.1094775
	K/L	2.8390536	1.2547	3.5548673	5.0250518	1.7697618	0.5777958	0.9674288
	NVA	5.6156842	3.9925745	2.485982	3.7932893	4.0248468	3.8087643	3.1982701
Ind	Var	59-60	60-61	61-62	62-63	63-64	64-65	65-66
30	Units	2.2161325	2.0307595	2.8358189	2.1952329	2.1353853	2.1570956	2.0569162
	Prod K	3.6836947	4.6229613	4.9187305	3.8970194	3.8949844	3.4316096	2.9601673
	Emp	3.7955115	3.57843	4.119847	3.4603929	2.6381564	3.1620719	3.0808528
	K/L	4.3482781	3.6917144	3.6400616	1.9911928	1.8742304	1.7705281	1.5331801
	NVA	4.0750479	3.7518947	4.0960345	4.2491578	3.7818662	2.9358214	2.9090943
31	Units	1.4697717	1.78703	1.7868665	1.7889707	1.8041923	1.2847369	1.6935286
	Prod K	1.6396141	1.8108655	1.6069587	1.4668139	1.7142876	1.5361332	1.8105748
	Emp	1.4253541	1.5800407	2.9529461	1.5269297	1.7632296	1.6801685	1.6748921
	K/L	1.0702074	1.0240058	1.8237561	1.4572659	0.8058056	1.0293169	0.6950554
	NVA	2.1481963	4.0764977	2.3079777	2.1495875	2.3729224	2.1658613	2.2251672
32	Units	0.9479371	0.8980619	0.8965503	0.9608661	0.8980689	0.8217042	0.8296771
	Prod K	0.9024545	0.6231498	1.200349	1.2507323	0.9957665	0.9557238	0.9511284
	Emp	0.9104221	0.7189772	0.9350981	0.987873	0.9057185	1.0032236	0.7726808
	K/L	0.8092792	0.7757336	1.2460496	1.1711297	0.9893979	0.9557238	0.8435999
	NVA	0.9903303	0.8131912	1.1196083	1.4629204	0.928095	0.7986671	0.7878604
33	Units	1.7710955	1.8616789	2.0578874	1.884868	1.7008755	1.6055577	1.5848109
	Prod K	2.5835389	2.7719651	3.1133708	1.834848	1.919923	1.8765837	1.8445556
	Emp	2.2091289	2.1148543	2.4235919	1.85925	1.7603792	1.7613345	1.6628425
	K/L	1.0806921	4.2616061	1.265898	2.0031794	1.2869832	1.2303156	3.1698983
	NVA	2.3425017	2.3510589	2.7664992	2.7285668	2.2716538	1.9836839	1.8602524
34	Units	1.7207525	1.6797184	1.789143	1.9514928	1.9101133	1.8334576	1.7222937
	Prod K	2.3366715	2.4776824	2.6696493	2.5465123	2.4365858	2.5193892	4.1349849
	Emp	2.0847337	2.1141641	2.2037603	2.244713	2.1231421	2.0470586	2.0078001
	K/L	0.6327579	0.6225132	0.5016971	0.6912447	0.6139766	0.6187429	3.2460797
	NVA	2.2849978	2.4468908	2.3987655	2.3638832	2.4030568	2.3537266	2.0018867
35+36	Units	1.3524272	1.4158875	1.4613327	1.436828	1.4347873	1.3529156	1.3545946
	Prod K	1.5540425	1.6587838	1.7513491	1.5681612	1.4985232	1.5287672	1.272282
	Emp	1.571347	1.6045591	1.5938415	1.4527626	1.3817903	1.6003004	1.4534023
	K/L	0.6301791	4.0220033	0.5391847	0.5964625	0.6488219	0.6532158	0.7805118
	NVA	3.2934348	3.9369318	1.8746327	1.7066662	1.6190337	1.8107316	1.6139465
37	Units	1.7034633	1.5952453	1.8178779	1.8102245	1.4517824	1.5145344	1.480668
	Prod K	2.2167879	2.2095371	1.9810667	1.9002669	1.6530301	1.886289	1.6108421
	Emp	1.7339524	1.873571	1.8705563	1.7518876	1.7901379	1.702622	1.8125378
	K/L	0.8269103	0.9785184	1.0210835	0.9924958	1.0034237	0.8271679	4.5465404
	NVA	3.5273853	2.0218445	1.9672816	1.983146	1.6213345	1.9078317	1.6049249
38	Units	1.6077146	1.6831706	1.7846705	2.2991457	2.1245458	1.9461393	1.8415842
	Prod K	1.9627256	2.4019826	2.9208975	2.4200581	2.7384551	2.1648157	2.196668
	Emp	4.0420194	2.2157043	2.2139579	2.7253251	2.2419248	1.8949854	2.1352404
	K/L	1.5663995	0.8768375	1.0603733	1.1704196	0.9311043	1.2080265	0.7048678
	NVA	4.7376857	2.5514094	3.0457488	3.1297288	2.9417212	2.2693751	2.6379007
40	Units	1.0182814	1.1982477	1.3168143	0.9796467	1.0381157	1.3413264	1.3373171
	Prod K	1.7089155	1.9261629	1.9909053	1.7361537	1.1617653	0.8994909	0.9032666
	Emp	1.5209909	1.5661252	1.7198814	1.2995912	1.3053228	0.9938227	0.9084742
	K/L	1.9243233	2.1934002	1.4032344	0.940874	1.0042647	0.6320118	0.7220618
	NVA	2.7595218	2.0869218	1.6137999	1.5019555	1.3542988	1.1101734	1.1656684

Table: C.5.14: CV Results for Large States for 1966-75

	Var	66-67	67-68	68-69	69-70	70-71	73-74	74-75
20+21	Units	1.0923497	1.0872051	1.0363002	1.0905429	1.0721621	1.0035723	1.0393311
	Prod K	1.1172954	1.0991838	1.1395763	1.1798918	1.324114	0.8688277	0.9069262
	Emp	1.0382686	1.0823632	1.0888291	1.0187354	0.9458776	1.8802117	0.8676136
	K/L	0.5484769	0.5912066	0.41717	0.5291831	0.5375365	0.5251316	0.4875414
	NVA	1.0244377	1.0996578	1.0045551	1.1685781	1.0798435	0.9608326	0.825043
22	Units	3.3039264	2.8881495	3.1902872	3.2840698	3.1875201	2.274514	1.9439916
	Prod K	3.4794261	2.256157	1.9318695	2.6884172	2.3960649	1.4485178	1.5613181
	Emp	4.2646756	3.348571	4.2030532	3.9080516	3.8053107	2.996354	2.6208567
	K/L	4.5670745	2.2912924	2.5107336	1.29446	1.3977452	1.3133298	0.700205
	NVA	1.9386277	2.057664	2.2265491	2.2575754	2.2120864	1.8046073	2.4754548
23	Units	1.1935946	1.2455389	1.2323823	1.1518544	1.223093	1.2167146	1.1140264
	Prod K	1.4085679	1.4392956	1.3084683	1.334168	1.3579085	1.4673465	1.5647565
	Emp	1.4695494	1.4907277	1.4161567	1.3951857	1.3790544	1.461005	1.6014675
	K/L	0.3958928	0.3913403	0.3650605	0.3787643	0.5148074	1.4450519	3.0248048
	NVA	1.6580159	4.1178749	1.5704581	1.7549709	1.5242202	1.824015	1.6797077
24	Units						1.8689002	1.5128156
	Prod K						2.6711565	1.4383124
	Emp						1.6722145	1.5096581
	K/L						4.0064968	0.7786637
	NVA						1.7686798	1.6067166
25	Units						4.2131089	2.0136199
	Prod K						6.817657	5.2272729
	Emp						6.9489779	5.4412479
	K/L						3.7059245	2.1695628
	NVA						7.8984416	5.3874056
26	Units	1.4721779	1.4650824	1.5270746	1.7755161	1.596933	1.3232098	1.0363926
	Prod K	1.4639938	2.4151379	1.7338817	1.8114045	1.7788657	1.7106931	1.3037218
	Emp	1.646101	1.8067123	1.7194214	2.0060256	1.9638823	1.6233139	1.220409
	K/L	0.6538657	3.6255226	0.8595774	0.7261543	0.7657559	0.6454955	0.4432933
	NVA	1.5351277	3.6050038	1.6956594	1.837996	1.8889557	4.1016464	1.425528
27	Units	1.0515466	0.9855363	1.037322	3.1570756	1.1144019	2.5449998	0.8674191
	Prod K	1.7134718	1.692646	1.7601852	1.8280452	4.6497917	1.2643753	2.4972586
	Emp	1.2222302	1.3561305	1.2951883	1.3953589	1.3157128	1.2453536	0.8878282

	K/L	1.2586733	4.0292703	0.7812411	0.6055415	4.4694685	0.7794196	3.211643
	NVA	1.8742838	2.0820795	2.2065013	1.9686645	4.4247122	1.4097781	1.1097936
28	Units	1.3984534	1.2945721	1.3161877	1.3250584	1.32476	1.2900724	1.5825782
	Prod K	1.0768874	1.0219286	1.0958352	1.8503458	4.1113069	1.0177648	0.9170087
	Emp	1.1033973	1.2210049	2.6017211	1.0482832	2.4477658	1.0471877	1.0637807
	K/L	0.8726608	3.893189	0.9261628	2.1024827	3.5009184	0.7184016	0.6105921
	NVA	1.3294613	1.2916715	1.3006842	1.4269755	1.2573188	3.6097938	0.9594936
29	Units	3.0756918	3.6129561	4.4132377	3.5025555	3.488458	1.8802922	2.5351194
	Prod K	2.4039628	3.6459554	4.3254696	3.4187503	2.9401709	3.0251736	2.2278042
	Emp	3.6095914	3.8029631	3.8196021	3.2806929	3.4445063	2.5228422	2.294608
	K/L	0.3713417	1.7513111	1.0020531	1.2007157	1.370645	3.5446791	0.6427892
	NVA	3.5932949	3.5628979	3.7172987	5.7178073	3.5739454	4.7070293	2.9883714
30	Units	1.9035715	2.0910683	1.7470584	1.8814642	1.560356	1.3286728	1.2613722
	Prod K	2.926668	2.2303726	2.5767229	5.1156156	2.1860374	1.634592	1.381197
	Emp	2.8213918	2.8646363	2.5015597	3.1467829	2.0113633	1.6766812	1.4377431
	K/L	1.9572049	5.6944978	1.6736513	3.5536359	1.5529658	0.952004	0.7087708
	NVA	2.4983192	2.1963963	3.2257952	2.3767138	2.365679	1.5349777	1.520396
31	Units	1.7386371	1.4968105	1.4829484	1.7859171	1.6349838	3.6545346	1.135942
	Prod K	1.7619754	1.5928335	1.6888659	1.8114969	1.7140713	1.4944495	1.2647063
	Emp	1.5604474	1.6666046	1.5810567	1.5917213	0.9909137	1.4189558	1.3269923
	K/L	1.4119432	0.9242504	0.5738658	0.7933014	1.2246241	0.7463642	0.582228
	NVA	1.7479187	2.020713	2.1447153	1.8276371	1.9424514	2.2457443	1.8663628
32	Units	1.0642502	1.0409504	1.3437497	1.5765331	1.8717958	1.6552233	2.0221874
	Prod K	1.195975	1.0825175	1.3321298	4.0314249	1.3178061	1.0316536	1.1811794
	Emp	3.7199278	1.7341107	1.0066786	1.0150969	1.1395621	1.0864552	1.5271203
	K/L	0.9200037	0.6583197	0.7236358	3.5032417	0.7946822	1.2307462	2.3894595
	NVA	1.0797755	1.0858382	1.7722181	1.2683599	1.7019876	1.8513652	2.2137475
33	Units	1.4239816	1.4360186	1.2243043	1.2330495	1.14758	0.9020482	0.929194
	Prod K	1.6936905	1.6579342	1.5855954	1.5204283	1.4913869	1.3426595	1.1410474
	Emp	1.5112431	1.4927174	1.460922	1.3666368	1.3831109	1.3002488	1.1831682
	K/L	1.103	1.0972414	0.9589832	0.7453521	0.8384967	0.8139016	1.125775
	NVA	1.499484	1.7323377	1.5746654	1.4177221	1.3848392	2.7483131	1.3149874
34	Units	1.6577033	1.6289621	1.7293876	1.6504974	1.6617209	1.2646221	0.9915031
	Prod K	2.1275166	2.0253653	2.1205168	1.983693	2.0125398	1.6167893	1.4660471
	Emp	1.9087973	1.8189026	1.8202201	1.9223233	1.8678396	1.6044644	1.3252166
	K/L	0.7538689	2.4569383	0.8772055	0.707891	0.8330853	0.5487269	0.336149
	NVA	2.1900601	2.1171543	2.5054314	2.0317804	2.1887072	1.9393905	1.8757423
35+36	Units	1.2371652	1.2317382	1.2336565	1.2449387	1.2496264	1.1625812	1.0166148
	Prod K	1.1480481	1.1202793	1.1820741	1.1923598	1.1329385	1.0204238	1.0083502
	Emp	1.3216163	2.0402718	1.1873692	1.2147069	1.2497722	1.1415431	1.0957689
	K/L	0.6382417	0.9889787	0.5949429	0.4982505	0.6589354	0.5185113	0.5720201
	NVA	1.5536402	1.466927	1.4926108	1.3946452	1.4072002	1.4108631	1.1964652
37	Units	1.3611247	1.6198273	1.2779383	1.2163229	1.2892669	1.0345689	1.1801932
	Prod K	1.6470887	1.5798474	1.526231	1.6235654	1.597179	1.4522775	1.5046397
	Emp	2.8960108	1.5875923	1.6427338	1.4856261	1.7315102	1.393122	1.5168648
	K/L	0.6814161	0.7082883	0.8151792	0.8991701	4.0876896	1.5435685	1.0349774
	NVA	1.6747582	1.4262803	1.3468421	1.3858514	1.4032143	1.1505731	1.3705498
38	Units	1.7693502	1.9083912	2.1121901	2.0989848	2.1786097	1.6654937	1.2865626
	Prod K	1.898395	1.9889617	1.9727064	2.2431396	2.3659931	3.2817964	1.5497345

	Emp	2.091732	2.0866729	2.1440523	1.8840786	2.1799431	1.7444029	1.3558375
	K/L	0.9285279	1.4292384	1.1248844	1.0293747	0.7986343	1.8447766	0.4637355
	NVA	2.6000906	2.8673306	2.7395725	2.4167558	3.7016517	4.5563772	1.605016
40	Units	1.2768031	1.3042196	1.2835563	1.328699	1.1076761	1.2378329	1.405394
	Prod K	1.0857955	1.086573	1.0479072	1.0534744	1.0910312	1.8127934	1.8098821
	Emp	1.050841	1.8355805	1.7865159	1.9056534	1.8059151	1.8413299	1.5864155
	K/L	0.6023084	3.556803	0.5186046	4.1401346	0.5152808	1.8057558	0.6003725
	NVA	1.087789	1.178346	1.077637	1.293958	3.9948027	1.2888755	1.0187045
41	Units			1.0594194			1.0448624	1.7931681
	Prod K			8.6158027			3.0213686	6.2115216
	Emp			5.3638698			1.686072	5.399941
	K/L			4.7809914			2.3749645	2.5995623
	NVA			1.7438803			3.3784981	5.0269155

Table: C.5.15: CV Results for Large States for 1976-85

		CV for Large States for 5 variables								
Ind	Var	76-77	77-78	79-80	80-81	81-82	82-83	83-84	84-85	85-86
20+21	Units	1.078	1.660	1.010	1.013	1.974	0.88149	1.882	0.91776	1.948
	Prod K	1.053	1.099	1.029	1.016	1.063	0.96627	1.011	1.00299	1.100
	Emp	1.078	1.020	1.077	1.004	1.034	0.88315	1.048	0.86274	1.018
	K/L	0.584	0.782	0.425	0.594	0.532	0.49059	0.411	0.3919	0.358
	NVA	1.086	1.085	1.036	1.045	1.296	1.00465	1.029	0.91643	1.103
22	Units	1.536	2.071	2.351	2.276	2.268	2.30342	2.358	1.678	2.187
	Prod K	1.077	1.090	1.063	1.023	1.073	1.25304	1.230	1.229	1.404
	Emp	2.635	2.296	2.419	2.315	2.449	2.56687	2.601	2.167	2.268
	K/L	0.832	0.751	0.596	0.580	0.601	0.52918	0.526	0.634	1.226
	NVA	1.854	1.286	1.282	1.354	1.272	1.4617	1.988	1.244	1.279
23	Units	1.342	1.047	1.071	1.079	1.083	1.1071	1.118	1.132	1.110
	Prod K	1.483	1.503	2.946	2.615	2.493	2.30085	2.122	2.112	1.906
	Emp	1.460	1.429	1.404	1.379	1.237	1.39676	1.382	1.189	1.155
	K/L	0.231	0.299	1.059	3.057	2.015	2.40896	2.684	2.460	1.828
	NVA	1.706	1.737	1.520	1.483	1.602	1.34152	1.376	1.349	1.391
24	Units	1.678	1.416	1.437	1.506	1.503	1.36086	1.322	1.514	1.426
	Prod K	3.566	1.223	1.183	1.564	1.576	1.59659	1.712	1.524	1.481
	Emp	1.463	1.270	1.333	1.377	1.470	1.41271	1.462	1.397	1.405
	K/L	3.816	0.423	0.698	0.736	0.803	0.84449	0.745	0.600	0.528
	NVA	1.562	1.460	1.433	1.732	1.706	1.62315	1.825	1.776	1.726
25	Units	2.806	2.957	2.436	2.292	2.215	2.76937	2.358	2.669	2.237
	Prod K	4.800	4.806	3.759	3.348	3.294	2.20875	2.678	2.270	2.173
	Emp	5.606	5.362	4.692	4.399	4.276	4.76969	4.527	4.504	4.081
	K/L	2.784	1.514	1.824	1.025	1.203	1.2315	2.532	1.540	1.122
	NVA	5.360	5.395	4.529	4.385	4.253	4.82363	4.587	4.358	3.882
26	Units	1.333	1.230	1.335	1.429	1.346	1.4479	1.365	1.669	1.453
	Prod K	1.406	1.382	1.282	1.252	1.205	1.1182	1.160	1.227	1.172
	Emp	1.560	1.457	1.286	1.269	1.183	1.22821	1.205	1.229	1.264
	K/L	0.615	0.687	0.729	0.837	0.752	0.60136	0.710	0.696	0.618
	NVA	1.680	1.701	1.440	1.465	1.231	1.15999	1.213	1.322	1.233
27	Units	1.060	1.058	1.058	1.084	1.094	0.86755	1.075	0.86552	1.059
	Prod K	1.013	1.011	1.087	1.009	1.027	0.91778	1.069	1.009	0.973
	Emp	1.057	1.082	1.051	1.826	1.041	0.89602	1.090	1.010	1.053
	K/L	0.305	0.274	0.388	0.526	0.337	0.41442	0.759	0.58708	0.406

	NVA	1.119	1.249	1.211	1.014	1.144	1.0121	1.457	1.20504	1.006
28	Units	1.154	1.083	1.105	1.144	1.084	1.17528	1.101	1.219	1.106
	Prod K	1.031	1.080	1.804	1.940	1.965	0.92652	1.083	0.797	1.009
	Emp	1.038	1.025	1.092	1.087	1.027	0.92535	1.034	0.903	1.238
	K/L	1.004	0.950	0.550	0.683	0.688	0.72829	0.789	3.326	0.509
	NVA	1.077	1.069	0.945	1.036	1.066	1.36304	1.335	1.051	1.188
29	Units	1.892	2.085	1.992	2.126	2.018	2.20257	2.253	2.34552	2.285
	Prod K	1.962	1.979	1.998	2.092	1.887	2.14589	2.377	2.02817	1.721
	Emp	2.065	1.896	1.895	2.120	2.047	2.04536	2.019	2.18549	2.044
	K/L	2.248	1.766	1.239	1.178	0.933	0.84044	0.714	0.7008	0.889
	NVA	2.356	2.204	1.889	2.285	2.067	2.12286	2.396	1.99728	1.977
Ind	Var	76-77	77-78	79-80	80-81	81-82	82-83	83-84	84-85	85-86
30	Units	1.380	1.226	1.042	1.053	1.077	1.07584	1.068	1.05483	1.033
	Prod K	1.389	1.682	1.079	1.112	1.116	1.01453	1.208	1.2156	1.663
	Emp	1.291	1.300	1.034	1.542	1.219	1.1275	1.195	1.17507	1.133
	K/L	1.232	1.269	0.977	1.311	0.649	0.58648	0.503	0.45297	0.520
	NVA	1.389	1.311	1.997	2.095	1.663	1.49327	1.609	1.59615	1.565
31	Units	1.132	1.024	1.277	1.270	1.114	1.1814	1.044	1.11605	1.001
	Prod K	1.191	1.207	1.800	1.832	1.263	1.13685	1.134	2.10545	0.930
	Emp	1.285	1.283	1.860	1.365	1.093	1.15441	1.246	1.02197	0.973
	K/L	0.604	0.742	1.438	0.615	0.968	0.74528	0.810	1.57342	0.850
	NVA	1.926	1.952	1.137	1.459	1.106	1.12143	1.577	1.1308	3.739
32	Units	1.093	0.999	0.979	0.996	0.961	0.87996	0.844	0.86644	0.836
	Prod K	1.022	1.643	1.668	1.752	1.843	0.8598	1.877	0.7534	1.838
	Emp	1.098	1.095	1.058	1.026	1.697	0.72241	1.688	0.69132	1.681
	K/L	0.941	0.995	0.941	1.244	1.147	1.16695	2.130	1.54703	0.987
	NVA	1.095	1.043	1.089	1.307	1.034	0.73359	1.501	0.97826	1.000
33	Units	1.077	1.000	1.025	1.206	1.035	0.82912	1.010	0.806	1.246
	Prod K	1.606	1.801	1.642	1.609	1.584	1.62483	1.512	1.536	1.466
	Emp	1.163	1.116	1.057	1.048	1.032	1.02837	1.067	1.089	0.999
	K/L	0.961	0.802	0.788	0.976	0.837	0.92105	0.774	0.744	0.713
	NVA	1.045	1.155	1.018	1.041	1.353	1.27965	1.313	1.381	1.277
34	Units	1.009	1.011	1.021	1.037	1.021	0.98605	1.031	0.964	1.094
	Prod K	1.449	1.584	1.498	1.616	1.512	1.42629	1.332	1.281	1.197
	Emp	1.300	1.356	1.257	1.356	1.297	1.31635	1.197	0.838	1.120
	K/L	0.219	0.762	0.346	1.217	0.312	0.56068	0.303	0.452	0.333
	NVA	1.894	1.803	1.786	1.852	1.786	1.63624	1.795	1.848	1.722
35+36	Units	1.150	1.038	1.072	1.115	1.103	1.12511	1.068	1.106	1.036
	Prod K	0.974	0.948	0.946	1.000	0.968	0.9806	0.951	1.10593	1.027
	Emp	1.207	1.054	1.039	1.048	1.033	1.07456	0.993	0.97574	0.963
	K/L	1.849	0.467	0.421	0.420	0.322	0.44443	0.314	1.00478	0.290
	NVA	1.171	1.148	1.148	0.868	1.171	1.29881	1.108	0.27296	1.098
37	Units	1.291	1.190	1.134	1.216	1.128	1.11475	1.172	1.1916	1.137
	Prod K	1.214	1.221	1.579	1.570	1.578	1.62226	1.663	1.7421	1.464
	Emp	1.241	1.281	1.221	1.398	1.234	1.32733	1.225	1.20792	1.085
	K/L	1.533	1.584	1.554	1.572	1.209	1.58904	1.124	0.98951	0.951
	NVA	1.321	1.314	1.336	1.436	1.493	1.42475	1.551	1.63805	1.578
38	Units	1.915	1.615	1.665	1.741	1.752	1.50934	1.418	1.48544	1.351
	Prod K	1.880	1.358	1.384	1.294	1.291	1.24658	1.196	1.03883	1.081
	Emp	1.356	1.269	1.262	1.356	1.296	1.26305	1.241	1.2886	1.175
	K/L	0.666	0.729	0.783	0.834	0.780	1.25407	0.773	1.786	0.603
	NVA	1.778	1.443	1.463	1.637	1.356	2.56088	1.918	1.72504	1.825
40	Units	1.344	1.220	1.311	1.468	0.989	1.09631	1.191	1.35418	1.028
	Prod K	1.059	1.061	1.079	1.223	1.780	0.78576	1.761	0.76338	1.060
	Emp	1.015	1.090	1.024	1.088	1.055	0.67045	1.059	0.62277	1.063
	K/L	0.555	0.558	3.204	0.440	0.373	0.73219	0.432	0.42193	0.413
	NVA	1.078	1.013	1.068	1.026	1.303	0.8634	1.061	1.04665	1.016
41	Units	1.405	0.820	1.177	0.572	0.616	0.92355	1.327	2.21277	0.782
	Prod K	2.604	2.899	1.575	1.995	1.055	3.06298	2.443	2.74774	1.835
	Emp	2.782	3.131	1.888	1.657	1.686	4.42435	2.209	1.99586	1.133
	K/L	3.177	2.189	3.230	2.185	0.966	3.59288	2.345	1.47944	1.829
	NVA	3.384	2.846	2.037	1.942	0.889	7.21475	4.060	5.88248	2.269

Table: C.5.16: CV Results for Large States for 1986-95

CV Results for each of the five variabels and Structural Ratios for 2-digit Industries

Ind	Var	86-87	87-88	88-89	89-90	90-91	91-92	92-93	93-94	94-95	95-96
20+21	Units	1.0474	1.0063	1.0195	1.0125	1.0213	1.0354	1.1286	1.0882	1.0603	1.0961
	Prod K	1.0149	1.0731	1.0571	1.0557	1.0125	1.0853	1.0245	1.7959	1.0417	1.1809
	Emp	1.0564	1.0752	1.0782	1.0486	1.0457	1.0374	1.0557	1.0283	1.0084	1.0167
	K/L	0.5473	0.3542	0.4458	0.4212	0.3849	0.4381	0.4367	0.9439	0.7009	0.5640
	NVA	1.0520	1.0539	1.0691	0.8735	0.7576	0.8358	2.7252	0.8214	1.0057	1.0090
22	Units	2.6300	2.7577	2.6647	2.8540	2.6051	2.7364	1.0517	2.0432	2.5209	2.8939
	Prod K	1.1006	1.0968	1.0864	1.1014	1.0879	1.0722	2.4967	1.2291	1.0459	1.0334
	Emp	2.4855	2.3894	2.4030	2.6111	2.3290	2.4709	1.0192	2.3146	2.3760	2.5237
	K/L	1.3760	1.0888	1.0349	0.6459	0.6791	0.5999	1.2252	0.6948	0.6181	0.6360
	NVA	1.1481	1.0677	1.0737	1.3309	1.0887	1.1937	1.0831	1.1108	1.4869	1.2960
23	Units	1.1296	1.1587	1.1599	1.2017	1.2384	1.2976	1.5513	1.3090	1.3327	1.3565
	Prod K	1.8118	1.7988	1.7561	1.7333	1.7341	1.7282	1.6710	1.6447	1.3987	1.4578
	Emp	1.2008	1.1948	1.2059	1.1841	1.1425	1.1829	1.1789	1.1880	1.2268	1.2318
	K/L	1.8259	1.6622	1.5246	0.8688	1.2220	2.9377	1.1422	1.6306	0.9276	1.0661
	NVA	1.4471	1.4298	1.5063	1.5302	1.4284	1.4857	1.6726	1.8130	1.3925	1.4036
24	Units	1.4903	1.4402	1.4681	1.3991	1.3907	1.3144	1.3152	1.3488	1.3712	1.5734
	Prod K	1.4671	1.3796	1.4560	1.2802	1.2906	1.2423	1.2691	2.0316	1.1889	1.2823
	Emp	1.3946	1.2902	1.3825	1.3108	1.2769	1.1639	1.2160	1.2828	1.2040	1.2884
	K/L	0.5092	0.5798	0.4641	0.6899	0.7533	0.9913	0.7936	0.8249	0.6094	0.6554
	NVA	1.7267	1.4593	1.5014	1.3943	1.3487	1.1792	1.2300	1.5077	1.2085	1.2966
25	Units	2.8326	1.8630	2.7982	1.9607	2.0741	1.9698	2.1538	2.3143	2.3993	2.8795
	Prod K	3.3134	1.7286	4.0589	2.8007	3.6493	3.4422	3.6384	3.1806	2.5189	2.4464
	Emp	4.6952	4.4194	4.7253	4.4342	4.4285	4.1627	4.4320	4.1815	4.3997	4.3816
	K/L	1.9288	1.1847	2.0748	2.0976	1.3882	1.1191	2.1938	1.0388	1.5729	2.4061
	NVA	4.7006	4.3166	4.7158	4.6088	3.2056	4.1705	4.4422	4.1079	4.2867	4.4360
26	Units	1.5155	1.3846	1.3927	1.4344	1.3894	1.4576	1.5493	1.6266	1.7053	1.6550
	Prod K	1.2507	1.3762	1.1914	1.3796	1.2338	1.3215	1.3622	1.3479	1.3760	1.2974
	Emp	1.3128	1.3639	1.2806	1.9227	1.3710	1.4825	1.5348	1.7441	1.6979	1.7067
	K/L	0.7515	0.8718	0.6446	0.6763	0.5631	0.7220	0.7104	0.9834	0.6403	0.7958
	NVA	1.3921	1.4474	1.5151	1.5016	1.3691	1.5055	1.5668	1.7647	1.4556	1.6068
27	Units	1.0212	1.0522	1.0413	1.0295	1.0465	1.0801	1.0884	1.0252	1.0094	0.8772
	Prod K	1.1566	0.9628	0.9810	1.1571	1.1682	1.1860	1.2058	1.1861	1.1495	1.5972
	Emp	1.0581	1.0273	1.0277	1.0690	1.9634	1.0392	1.0485	1.8854	1.9635	0.9690
	K/L	0.3473	0.5085	0.6000	0.6598	3.0000	0.4967	0.4307	0.9756	0.8849	0.8086
	NVA	1.1031	1.0076	1.0828	0.9278	1.7010	1.2448	1.3297	1.2181	1.3973	1.5272
28	Units	1.1499	1.1357	1.1118	1.1157	1.0729	1.1280	1.1088	1.1403	1.1463	1.1210
	Prod K	2.6662	1.1001	0.7816	0.9063	0.8155	0.7732	0.8757	1.0025	1.3763	1.0129
	Emp	1.3790	1.5405	1.3180	1.3578	1.3511	1.3322	0.8141	1.6801	1.2678	1.3738
	K/L	1.6250	0.9671	1.1591	0.9832	1.5813	1.0564	1.1818	1.1721	1.0279	0.9784
	NVA	1.0122	1.0966	0.8994	1.0871	0.9667	0.8676	1.0528	1.2736	1.0450	1.0556
29	Units	2.4349	2.7153	2.3950	2.5004	2.6934	3.6863	2.7658	2.7161	2.6582	2.4917
	Prod K	2.0244	2.0558	2.2562	2.3098	2.5059	2.3619	2.3310	2.0753	2.1161	1.9597
	Emp	2.0829	2.2563	2.1760	2.3604	2.4007	2.4865	2.4793	2.5638	2.4059	2.1867
	K/L	0.4863	0.6206	1.2457	1.1471	1.1521	1.0032	0.7350	0.8793	1.4482	1.0377
	NVA	2.1583	2.1428	2.2389	2.0000	1.9483	2.4691	2.3026	2.7378	2.1397	2.0438

Ind	Var	86-87	87-88	88-89	89-90	90-91	91-92	92-93	93-94	94-95	95-96
30	Units	1.0941	1.0669	1.0421	1.0768	1.0791	1.0573	1.1024	1.1662	1.1657	1.1735
	Prod K	1.3947	1.3735	1.2367	1.4002	1.5258	1.3788	1.4940	1.5600	1.4272	1.7025
	Emp	1.2007	1.1920	1.1507	1.2203	1.2423	1.1887	1.2115	1.2192	1.2522	1.2797
	K/L	0.6571	0.6548	0.6180	0.6498	0.5640	0.5506	0.4438	0.5230	0.7434	0.7100
	NVA	1.6993	1.5699	1.6932	1.7815	1.5703	1.2315	1.7375	1.8633	1.5098	1.7126
31	Units	1.0568	1.0889	1.0057	0.9826	0.9767	0.9547	0.9335	1.0927	1.0333	0.9393
	Prod K	1.0852	0.9259	0.7721	0.9941	1.0827	0.8834	1.0851	1.1341	1.1629	1.1267
	Emp	1.1985	1.5033	1.3953	1.2732	1.0352	1.0310	1.0192	1.0833	0.9825	0.8233
	K/L	1.1814	1.5946	1.5316	1.1233	1.0970	1.2195	1.1833	0.9096	0.9156	0.9972
	NVA	1.2069	1.2887	1.2474	1.0477	1.3509	1.0481	1.4315	1.4470	1.4964	1.3825
32	Units	1.0831	1.0129	1.1648	0.8207	1.0107	1.1192	1.1793	1.8071	1.8109	0.8146
	Prod K	1.0174	0.9877	1.0707	1.0575	1.0297	1.0996	0.9914	0.9549	0.9346	1.0204
	Emp	1.0717	1.0050	1.0660	0.6679	1.0726	1.0533	1.0556	1.1661	1.0670	1.0554
	K/L	0.9624	1.0837	0.8503	0.7240	0.7818	0.7461	0.8778	0.7030	0.7243	0.6593
	NVA	1.0724	1.0145	1.0139	1.0583	1.0537	0.8688	1.0594	1.0087	1.0639	1.0504
33	Units	1.0763	1.0852	1.0780	1.0900	1.0863	1.7659	1.0754	1.0144	0.7610	0.7556
	Prod K	1.5092	1.4605	1.3983	1.4411	1.4756	1.3097	1.1674	1.0387	1.0529	0.9823
	Emp	1.0185	1.0059	1.0239	0.9927	1.0212	0.9460	0.9788	1.0397	1.0990	1.0831
	K/L	0.7160	0.8668	0.7559	0.7343	1.0220	0.9111	0.8771	0.6481	0.5909	0.6333
	NVA	1.2337	1.2218	1.4162	1.3355	1.3332	1.1871	1.0472	1.3043	1.3080	1.1494
34	Units	1.0584	1.0663	1.0461	1.0594	1.0287	1.0900	1.0285	1.8003	1.0956	1.0014
	Prod K	1.1733	1.3407	1.3039	1.1497	1.3802	1.2405	1.3468	1.7922	1.4146	1.6697
	Emp	1.1450	1.1199	1.0828	0.9590	1.0059	0.9049	1.0422	1.1483	1.0833	1.1346
	K/L	0.4533	0.3529	0.3969	0.3399	0.4259	0.3795	0.6005	0.5438	0.8940	0.5750
	NVA	1.7003	1.7581	1.8829	1.3383	1.3059	1.2262	1.3237	1.6000	1.5494	1.4923
35+36	Units	1.1003	1.0476	1.0077	1.0172	1.0195	1.0045	1.0548	1.0506	1.0171	1.0717
	Prod K	1.0837	0.9757	1.0155	1.0206	1.0076	0.9681	1.2449	1.0989	1.1058	1.1194
	Emp	1.0818	1.0589	1.0316	1.0491	0.9460	1.0123	0.9707	1.0974	0.9580	1.0927
	K/L	1.0344	0.3652	0.2944	0.3003	0.3847	1.1426	0.3742	0.4367	1.0471	1.0080
	NVA	1.1289	1.0509	1.0997	1.1911	1.2063	1.1334	1.2327	1.2279	1.1958	1.3721
37	Units	1.1254	1.1497	1.1269	1.1409	1.1483	1.1713	1.1592	1.1440	1.0941	1.1023
	Prod K	1.4117	1.3684	1.2776	1.4001	1.2977	1.3023	1.3831	1.3915	1.3303	1.5472
	Emp	1.1193	1.0661	1.1285	1.0112	1.0422	1.0669	0.9920	1.0115	1.0001	0.9825
	K/L	1.0207	0.7385	0.6319	0.6323	0.7781	0.8437	0.6604	0.7448	0.6888	0.7479
	NVA	1.4285	1.5056	1.5260	1.2466	1.1174	1.3049	1.4083	1.3808	1.5625	1.7947
38	Units	1.4258	1.3331	1.4190	1.3705	1.2529	1.3113	1.2979	1.2638	1.0941	1.5305
	Prod K	1.0581	1.2151	1.2905	1.2330	1.0777	1.1850	1.2603	1.3940	1.3303	1.4177
	Emp	1.0777	1.0443	1.1288	1.1281	1.0184	1.2120	1.1016	1.1527	1.0001	1.2410
	K/L	0.4999	1.0975	0.5212	0.5814	0.6305	0.5841	0.4763	0.6034	0.6888	0.5044
	NVA	1.3993	1.4283	1.1833	1.2299	1.1515	1.4821	1.6031	1.7415	1.5625	1.5450
40	Units	1.0202	1.0481	1.0751	1.1465	1.3517	0.9772	2.0353	0.8622	1.4396	1.4403
	Prod K	0.8472	0.7512	0.8505	0.7893	0.8873	0.9312	0.8332	0.8913	1.3045	0.8367
	Emp	0.5686	0.5895	0.6094	0.5695	0.6108	0.5612	0.5580	0.5629	1.1722	0.8164
	K/L	0.4341	0.4279	0.4286	0.4473	0.4929	1.3825	1.0912	1.0807	0.5209	0.7131
	NVA	0.8664	1.0337	1.1068	1.2660	1.0033	1.1388	0.8194	1.0160	1.5181	0.9001
41	Units	1.0736	4.7935	0.9142	1.0965	1.0329	1.1901	1.0315	1.6404	0.9322	1.1564
	Prod K	1.6190	1.6435	1.9854	1.4803	1.5316	1.7826	3.0543	3.0858	0.7806	2.4426
	Emp	1.4618	4.6726	0.9505	1.2778	1.3602	1.4805	1.3343	1.2891	0.6656	1.5949

	K/L	1.5545	1.7585	1.4461	0.8965	1.3096	1.1599	3.4197	2.3250	0.5830	1.7920
	NVA	2.0457	2.1976	2.1543	1.7003	1.6157	1.6478	4.3052	3.9281	1.0092	2.5259

APPENDIX D: HH and CV Results of All States and UT Taken Together for each of the Five Variables and Structural Ratios for a 40year Period, 1956-95

Table: D.6.1: HH and CV Measures of Dispersal for 1959-95 for Food Industry (IN21) for Trend Analysis

		HH	HH	HH	HH	HH	CV	CV	CV	CV	CV
Year	Industry	No units	Prdcti K	Emp	K/L	NVA	No units	Prdce K	Emp	K/L	NVA
1959	21	0.12031	0.14637	0.12223	0.07565	0.14334	1.79574	2.18953	1.82723	1.19949	2.14723
1960	21	0.11647	0.14106	0.12237	0.34891	0.12429	1.73952	2.09872	1.83216	4.00722	1.86122
1961	21	0.11362	0.87443	0.1301	0.32168	0.12545	1.69301	6.74699	1.94689	3.81201	1.87861
1962	21	0.12179	0.13089	0.12562	0.0907	0.11516	1.82327	1.95818	1.8812	1.25734	1.71825
1963	21	0.11699	0.1508	0.12586	0.10298	0.11772	1.74791	2.22498	1.88475	1.50649	1.75948
1964	21	0.1091	0.11872	0.11868	0.34806	0.10865	1.62557	1.77433	1.77379	3.89908	1.61839
1965	21	0.10626	0.11971	0.11886	0.68233	0.10226	1.57897	1.78899	1.77642	5.72479	1.51104
1966	21	0.11156	0.12641	0.11719	0.07032	0.11541	1.66448	1.87217	1.74621	0.85456	1.72074
1967	21	0.1113	0.1247	0.12178	0.07589	0.12313	0.33589	0.24208	0.41905	0.20422	0.22056
1968	21	0.10636	0.12797	0.12191	0.06786	0.11247	1.58069	1.89277	1.82103	0.68911	1.67919
1969	21	0.10244	0.13315	0.11525	0.06977	0.12807	1.52296	1.95923	1.7185	0.83859	1.89402
1970	21	0.10097	0.14993	0.10852	0.07191	0.12034	1.48843	2.18839	1.6163	0.82952	1.79825
1973	21	0.10098	0.09793	0.24162	0.40366	0.10632	1.50291	1.45487	2.97154	4.04981	1.58379
1974	21	0.09404	0.10098	0.09786	0.04994	0.0941	1.3838	1.47269	1.43338	0.55004	1.39116
1976	21	0.08993	0.10483	0.09933	0.05411	0.10101	1.32851	1.51975	1.45212	0.67454	1.4731
1977	21	0.08902	0.08957	0.09381	0.06053	0.099	1.31583	1.32353	1.38085	0.83043	1.44796
1979	21	0.08992	0.10177	0.09912	0.05566	0.09219	1.33446	1.5017	1.46601	0.63916	1.36815
1980	21	0.0928	0.10155	0.10186	0.05437	0.09311	1.36735	1.47977	1.48359	0.68142	1.37156
1981	21	0.0917	0.10593	0.10479	0.05252	0.1051	1.35264	1.53289	1.51928	0.6299	1.52294
1982	21	0.09916	0.10581	0.09966	0.05279	0.11004	1.35264	1.53289	1.51928	0.6299	1.52294
1983	21	0.09821	0.11067	0.09593	0.05055	0.09166	1.43783	1.58842	1.40856	0.56994	1.3521
1984	21	0.10286	0.11007	0.09775	0.05387	0.09966	1.49581	1.5815	1.43206	0.66806	1.45621
1985	21	0.10576	0.09955	0.09321	0.10749	0.10049	1.53085	1.45485	1.37285	1.55139	1.46655
1986	21	0.10596	0.10123	0.09677	0.05553	0.10569	1.5455	1.48579	1.42724	0.67887	1.54211
1987	21	0.11231	0.10697	0.09873	0.0475	0.10369	1.59176	1.53191	1.4346	0.51275	1.49388
1988	21	0.11344	0.10446	0.09856	0.05402	0.1076	1.61997	1.51532	1.44229	0.67209	1.55275
1989	21	0.1127	0.10529	0.09608	0.04685	0.09888	1.58036	1.49932	1.39221	0.5311	1.43641
1990	21	0.11408	0.10136	0.09593	0.06192	0.08787	1.59492	1.45461	1.39037	0.88835	1.29517
1991	21	0.11551	0.09798	0.095	0.06204	0.09583	1.62661	1.42543	1.38831	0.8788	1.40734
1992	21	0.12666	0.10273	0.09673	0.05017	0.09909	1.74264	1.48263	1.40988	0.59697	1.43896
1993	21	0.12128	0.23252	0.09424	0.07201	0.09325	1.68769	2.59733	1.3787	1.05917	1.36605
1994	21	0.11845	0.09505	0.09516	0.05808	0.11216	1.65802	1.38885	1.39031	0.79588	1.6055
1995	21	0.1226	0.09285	0.09349	0.05085	0.09829	1.68238	1.35262	1.36053	0.64562	1.41872

Table: D.6.2 HH and CV Measures of Dispersal for 1959-95 for Beverages Industry (IN22) for Trend Analysis

		No units			K/L	NVA	No units		No Emplys		NVA
Year	Industry	HH	HH	HH	HH	HH	CV	CV	CV	CV	CV
1959	22	0.22903	0.16685	0.38018	0.13609	0.16891	3.26501	2.5105	4.61014	2.03639	2.53901
1960	22	0.2323	0.18101	0.39567	0.79561	0.17349	3.37479	2.73279	4.88668	7.3795	2.6254
1961	22	0.22339	0.16823	0.37561	0.132	0.18841	3.39559	2.52495	5.07489	1.72922	2.87433
1962	22	0.24975	0.2202	0.57894	0.71134	0.21729	3.81765	3.3864	7.01288	7.94347	3.34098
1963	22	0.45029	0.2586	0.6137	0.2254	0.59527	6.5644	4.02788	8.12385	3.40147	7.96323
1964	22	0.32128	0.21051	0.55623	0.18305	0.20581	4.54729	3.21356	6.5293	2.78583	3.14434
1965	22	0.31863	0.20523	0.5346	0.16105	0.19265	4.51996	3.13574	6.37269	2.38841	2.94246
1966	22	0.3894	0.61601	0.56553	0.63022	0.21603	5.63611	5.93549	7.27503	7.79089	3.30707
1967	22	0.33589	0.24208	0.41905	0.20422	0.22056	4.69495	3.64372	5.46021	3.12075	3.35639
1968	22	0.38678	0.25482	0.59166	0.23113	0.23725	5.17672	3.20966	6.77813	3.50053	3.58128
1969	22	0.4033	0.30087	0.52253	0.13666	0.24151	5.32367	4.33247	6.28359	1.85097	3.63635
1970	22	0.40964	0.26929	0.53491	0.14285	0.24203	5.1774	3.87323	6.11065	2.09006	3.56502
1973	22	0.28797	0.15801	0.4431	0.13275	0.41388	3.74276	2.36665	4.90351	1.99174	4.70681
1974	22	0.24521	0.16772	0.39189	0.07213	0.33726	2.99959	2.31883	3.98134	1.04458	3.73309
1976	22	0.18289	0.11299	0.4167	0.10344	0.23444	2.46695	1.67933	4.1243	1.54075	2.91451
1977	22	0.29377	0.11811	0.34611	0.07657	0.1446	3.21725	1.7217	3.54282	1.10341	2.01941
1979	22	0.35609	0.11563	0.37629	0.06689	0.1439	3.52705	1.67638	3.63992	1.01	1.98557
1980	22	0.34263	0.10089	0.35049	0.07584	0.15008	3.52211	1.49664	3.56869	1.08931	2.1047
1981	22	0.33583	0.11557	0.38482	0.07724	0.13743	3.41011	1.67572	3.68654	1.12832	1.91924
1982	22	0.32826	0.13639	0.3988	0.06952	0.16012	3.41011	1.67572	3.68654	1.12832	1.91924
1983	22	0.34058	0.13163	0.40561	0.08031	0.24588	3.50983	1.87959	3.87987	1.17247	2.94451
1984	22	0.20817	0.13089	0.30952	0.07516	0.13608	2.5091	1.82803	3.18905	1.10046	1.90511
1985	22	0.31523	0.15842	0.3343	0.09912	0.14595	3.35458	2.15856	3.47199	1.47161	2.03341
1986	22	0.42971	0.11607	0.3902	0.10756	0.1248	4.00833	1.69657	3.79546	1.58767	1.80148
1987	22	0.47091	0.10354	0.36679	0.08865	0.11631	4.21893	1.53347	3.66348	1.31348	1.69949
1988	22	0.12031	0.16914	0.11334	1.49239	0.12896	4.00507	1.52006	3.58965	0.83686	1.70976
1989	22	0.4899	0.12159	0.42862	0.06442	0.15063	4.31254	1.76367	4.00266	0.84064	2.08124
1990	22	0.41906	0.1093	0.35286	0.07089	0.11711	3.9521	1.6105	3.58265	0.98911	1.70941
1991	22	0.44916	0.10633	0.39033	0.06299	0.13254	4.10913	1.57125	3.79616	0.80386	1.88972
1992	22	0.42396	0.11548	0.38119	0.07316	0.13324	4.06847	1.70249	3.82879	1.0125	1.91949
1993	22	0.27631	0.13649	0.35056	0.06653	0.1217	3.10103	1.93316	3.56916	0.89167	1.76497
1994	22	0.39737	0.10076	0.36605	0.08738	0.17341	3.83499	1.49489	3.65922	1.29298	2.33717
1995	22	0.51694	0.1044	0.40933	0.06893	0.11863	4.54624	1.55176	3.98811	0.91544	1.74288

Table: D.6.3 HH and CV Measures of Dispersal for 1959-95 for Textiles Industry (IN25) for Trend Analysis

		No units			K/L	NVA	No units		No Emplys		NVA
Year	Industry	HH	HH	HH	HH	HH	CV	CV	CV	CV	CV
1959	25	0.15405	0.18804	0.1837	1.0236	0.1999	2.31335	2.74829	2.69845	1.01847	2.88982
1960	25	0.15351	0.18253	0.17873	1.02127	0.17197	2.3044	2.68093	2.63465	0.67589	2.55037
1961	25	0.14791	0.17185	0.16337	1.05193	0.1926	2.20912	2.51372	2.41021	0.76751	2.75046
1962	25	0.13107	0.19216	0.18815	1.02129	0.19108	1.96686	2.74562	2.70145	0.58276	2.7338
1963	25	0.15703	0.19384	0.20529	0.94425	0.18412	2.27195	2.66403	2.77465	1.25886	2.56631
1964	25	0.12478	0.16265	0.18147	0.89625	0.17671	1.862	2.33606	2.53906	1.23853	2.48924
1965	25	0.14374	0.16167	0.17771	0.90975	0.18837	2.13423	2.35799	2.49978	0.94328	2.60949
1966	25	0.13286	0.15897	0.16615	0.95678	0.19605	1.9556	2.26186	2.33907	0.96699	2.63633
1967	25	0.13764	0.15971	0.16545	0.96534	0.88525	2.03534	2.30282	2.36735	0.58742	6.40666
1968	25	0.13685	0.14784	0.15839	0.93343	0.181	2.00544	2.13669	2.25545	0.58091	2.49115
1969	25	0.12836	0.15056	0.15749	0.93343	0.21537	1.91187	2.19585	2.27737	0.61837	2.86854
1970	25	0.13562	0.15091	0.1528	0.06726	0.176	1.9691	2.1429	2.1634	0.76105	2.40083
1973	25	0.13393	0.14992	0.1996	0.75113	0.1869	1.94896	2.13204	2.62039	0.81363	2.50465
1974	25	0.11407	0.15249	0.1608	0.94834	0.16546	1.57856	1.93251	2.00082	0.96586	2.03815
1976	25	0.13004	0.36518	0.14721	2.48073	0.16855	212.381	2903.98	24893.4	0.11666	0.11666
1977	25	0.11521	0.14309	0.14206	1.00728	0.16752	1.67143	1.97741	1.96691	1.00534	2.21094
1979	25	0.11569	0.37439	0.13763	2.72027	0.14732	1.67713	3.62948	1.9213	1.88907	2.01976
1980	25	0.11863	0.32232	0.13402	2.40505	0.14656	1.6775	3.20346	1.83762	1.74326	1.95843
1981	25	0.12013	0.29137	0.12914	2.25623	0.16076	1.71177	3.07835	1.8096	1.70113	2.11738
1982	25	0.1191	0.26191	0.12922	2.02695	0.13597	1.71177	3.07835	1.8096	1.70113	2.11738
1983	25	0.11769	0.23891	0.12852	1.85903	0.13978	1.68432	2.73331	1.80299	1.51599	1.91873
1984	25	0.12293	0.2167	0.12349	1.75483	0.13619	1.74276	2.57328	1.74886	1.4714	1.88261
1985	25	0.11795	0.19756	0.1151	1.71637	0.14498	1.68727	2.42697	1.65471	1.46671	1.96979
1986	25	0.12582	0.1824	0.11536	1.58103	0.14527	1.69553	2.30444	1.65772	1.39013	1.97263
1987	25	0.12058	0.16728	0.10959	1.52632	0.12743	1.71683	2.17543	1.5898	1.36837	1.79144
1988	25	0.12031	0.16914	0.11334	1.49239	0.12896	1.58822	1.98454	1.64878	1.20364	1.82876
1989	25	0.12005	0.13903	0.11343	1.22573	0.13241	1.72841	1.93589	1.64993	1.17331	1.8661
1990	25	0.12325	0.13211	0.1089	1.21315	0.11351	1.80069	1.90645	1.61465	1.18072	1.67668
1991	25	0.12487	0.11815	0.1089	1.08492	0.1177	1.82039	1.73685	1.61472	1.07564	1.73111
1992	25	0.14448	0.11562	0.10585	1.09229	0.12308	1.9914	1.67629	1.55523	1.07784	1.76317
1993	25	0.12634	0.16874	0.10519	1.60421	0.11665	1.79975	2.22202	1.54666	1.43666	1.6885
1994	25	0.12702	0.11134	0.10646	1.04581	0.11486	1.8073	1.62433	1.56305	1.0392	1.66723

1995	25	0.13214	0.11367	0.11437	0.99384	0.10807	1.84104	1.63804	1.64624	0.99502	1.5714

Table: D.6.4 HH and CV Measures of Dispersal for 1959-95 for Textile Products Industry (IN26) for Trend Analysis

		No units			K/L	NVA	No units		No Emplys		NVA
Year	Industry	HH	HH	HH	HH	HH	CV	CV	CV	CV	CV
1959	26	0.16736	0.14571	0.16893	0.08206	0.84728	2.49127	2.19297	2.51172	1.10701	7.08462
1960	26	0.16233	0.14885	0.16243	0.09641	0.14818	2.44659	2.24525	2.448	1.16865	2.23471
1961	26	0.16836	0.15966	0.19428	0.10337	0.29844	2.5496	2.41575	2.91243	1.23761	4.17771
1962	26	0.17357	0.17497	0.19335	0.10819	0.14983	2.63657	2.65886	2.9352	1.20542	2.22604
1963	26	0.16649	0.17257	0.1841	0.08631	0.15725	2.50539	2.58901	2.7407	0.81122	2.37264
1964	26	0.15071	0.17157	0.17316	0.0881	0.17704	2.27409	2.57555	2.59707	0.88507	2.64888
1965	26	0.15546	0.19639	0.15197	0.09181	0.17472	2.34606	2.89355	2.29333	1.02145	2.61806
1966	26	0.16599	0.17668	0.18854	0.08716	0.17443	2.47331	2.44788	2.75254	1.00885	2.58133
1967	26	0.16605	0.31912	0.21246	0.62271	0.61655	2.49926	4.11994	3.08204	6.18472	6.14971
1968	26	0.17075	0.19735	0.19267	0.10945	0.18822	2.56436	2.90516	2.84817	1.50995	2.79287
1969	26	0.20555	0.2109	0.23993	0.09248	0.21248	2.94563	3.00378	3.30164	1.16712	3.02074
1970	26	0.17851	0.20446	0.23192	0.0933	0.21748	2.63201	2.9336	3.22217	1.18938	3.0738
1973	26	0.13982	0.18862	0.18036	0.08323	0.57671	2.09622	2.70661	2.61342	0.99736	5.7173
1974	26	0.11616	0.14611	0.13751	0.06769	0.16399	1.73147	2.11653	2.01358	0.77474	2.31612
1976	26	0.13593	0.1485	0.16636	0.07068	0.18438	1.97273	2.11638	2.30515	0.91826	2.48107
1977	26	0.12433	0.14523	0.15169	0.07692	0.18268	1.83029	2.08002	2.1513	1.06537	2.46503
1979	26	0.13279	0.11643	0.1218	0.07981	0.14346	1.93521	1.72645	1.79766	1.12686	2.06007
1980	26	0.14297	0.12593	0.12631	0.08621	0.14496	2.05443	1.8506	1.85533	1.25252	2.10308
1981	26	0.13675	0.12233	0.11927	0.08016	0.12502	1.95953	1.78925	1.75105	1.15549	1.82229
1982	26	0.14496	0.11285	0.1221	0.07231	0.11837	1.95953	1.78925	1.75105	1.15549	1.82229
1983	26	0.13602	0.11544	0.11968	0.07541	0.12191	1.97387	1.71305	1.7699	1.0317	1.79916
1984	26	0.17104	0.12113	0.12212	0.07406	0.13182	2.31464	1.77433	1.78665	1.03204	1.90309
1985	26	0.14494	0.11553	0.12582	0.0697	0.1236	2.07669	1.71431	1.84921	0.89297	1.82099
1986	26	0.14966	0.12242	0.12895	0.0783	0.13886	2.15763	1.81873	1.90548	1.06084	2.03003
1987	26	0.1353	0.13704	0.135	0.07816	0.14749	1.92012	1.93911	1.91692	1.13332	2.04927
1988	26	0.14115	0.12292	0.12961	0.06907	0.15544	2.00866	1.79652	1.87719	0.91873	2.1917
1989	26	0.13476	0.13535	0.11627	0.06721	0.15692	1.91427	1.92071	1.69903	0.90754	2.14388
1990	26	0.1276	0.11758	0.12699	0.06416	0.15407	1.85327	1.72958	1.84598	0.79174	2.14625
1991	26	0.13687	0.1354	0.13957	0.07311	0.16702	1.96088	1.94418	1.99119	1.01133	2.27591
1992	26	0.15061	0.13879	0.14784	0.07017	0.16789	2.11027	1.9825	2.08099	1.04495	2.28431
1993	26	0.15626	0.13387	0.17701	0.08722	0.18748	2.16875	1.92671	2.37102	1.28351	2.46687
1994	26	0.1704	0.1327	0.17182	0.0668	0.23739	2.30853	1.91323	2.32209	0.86227	2.88002
1995	26	0.16974	0.13153	0.17835	0.07773	0.16483	2.3391	1.91996	2.42363	1.08283	2.28957

Table: D.6.5 HH and CV Measures of Dispersal for 1959-95 for Wood Industry (IN27) for Trend Analysis

		No units			K/L	NVA	No units		No Emplys		NVA
Year	Industry	HH	HH	HH	HH	HH	CV	CV	CV	CV	CV
1959	27	0.20444	0.17841	0.15884	0.08293	0.62534	2.99118	2.66766	2.39742	1.0639	6.19963
1960	27	0.18805	0.21442	0.17562	0.10904	0.27526	2.79078	3.10418	2.63	1.50018	3.72833
1961	27	0.15598	0.25137	0.16926	0.10702	0.30428	2.35386	3.49657	2.54389	1.45222	3.99177
1962	27	0.14724	0.21283	0.16451	0.10135	0.2913	2.21043	3.1465	2.49118	1.17354	3.98745
1963	27	0.13613	0.25656	0.14357	0.16012	0.19007	2.0091	3.54813	2.14602	2.42295	2.85671
1964	27	0.12277	0.21236	0.14121	0.09566	0.24989	1.79258	3.08087	2.12266	1.14605	3.48172
1965	27	0.1115	0.20313	0.12772	0.0781	0.24607	1.65751	2.808	1.91218	0.93528	3.20813
1966	27	0.10734	0.18022	0.12222	0.11682	0.23879	1.60058	2.48334	1.81607	1.74089	3.01077
1967	27	0.10723	0.19697	0.14818	0.78581	0.26011	1.5836	2.74578	2.19173	6.36817	3.32857
1968	27	0.11436	0.18743	0.13135	0.08739	0.27188	1.6927	2.69337	1.97113	1.11564	3.51104
1969	27	0.5081	0.21873	0.15362	0.07855	0.24302	4.99833	2.95958	2.26022	0.94876	3.1814
1970	27	0.11987	0.97238	0.13478	0.89306	0.88947	1.78779	7.37615	2.0228	7.04577	7.03045
1973	27	0.36546	0.13712	0.13915	0.08534	0.1242	4.01466	2.02863	2.05474	1.18054	1.85368
1974	27	0.09147	0.38697	0.0923	0.52876	0.1208	1.34945	3.55331	1.36061	4.22025	1.7371
1976	27	0.08663	0.10288	0.10016	0.05048	0.11574	1.28219	1.49611	1.46245	0.56753	1.64575
1977	27	0.08608	0.10275	0.10011	0.04902	0.12873	1.27429	1.49448	1.46181	0.51843	1.78419
1979	27	0.08536	0.1076	0.09404	0.04865	0.12625	1.26403	1.55267	1.38386	0.50545	1.77877
1980	27	0.08553	0.10109	0.21843	0.05138	0.10253	1.26312	1.46311	2.50049	0.63161	1.49181
1981	27	0.08718	0.09379	0.09479	0.04823	0.11403	1.29009	1.38052	1.39375	0.48997	1.62661
1982	27	0.09392	0.09458	0.09082	0.05093	0.09964	1.29009	1.38052	1.39375	0.48997	1.62661
1983	27	0.09329	0.09788	0.09726	0.0666	0.15128	1.37392	1.43364	1.42578	0.9549	2.00199
1984	27	0.0959	0.10489	0.10248	0.06266	0.12662	1.41566	1.53224	1.50179	0.85625	1.78279
1985	27	0.09478	0.1018	0.09761	0.05233	0.11076	1.39355	1.4828	1.43019	0.62454	1.60369
1986	27	0.10016	0.12237	0.09733	0.05049	0.1129	1.46242	1.71787	1.42664	0.56815	1.6139
1987	27	0.09437	0.09778	0.08758	0.05475	0.09679	1.38819	1.4324	1.29574	0.69177	1.4197
1988	27	0.09256	0.10349	0.09141	0.05842	0.11327	1.36416	1.50347	1.3487	0.78277	1.61812
1989	27	0.09876	0.11554	0.09408	0.0582	0.09155	1.4449	1.62701	1.37655	0.79862	1.35057
1990	27	0.09062	0.11805	0.09381	0.05915	0.1801	1.33181	1.65379	1.37311	0.81926	2.24986
1991	27	0.09396	0.11558	0.0999	0.05269	0.1384	1.38274	1.644	1.45922	0.63499	1.92929
1992	27	0.09477	0.11922	0.09252	0.04926	0.12153	1.38532	1.66617	1.35662	0.56959	1.69023
1993	27	0.08921	0.11686	0.08661	0.07833	0.11577	1.3131	1.6411	1.27798	1.15888	1.62949
1994	27	0.09669	0.11017	0.09264	0.07048	0.12892	1.40949	1.56808	1.35819	1.0335	1.78618
1995	27	0.09349	0.18591	0.09883	0.07057	0.14886	1.36905	2.26115	1.43577	1.03502	1.95313

Table: D.6.6 HH and CV Measures of Dispersal for 1959-95 for Paper Industry (IN28) for Trend Analysis

		No units			K/L	NVA	No units		No Emplys		NVA
Year	Industry	HH	HH	HH	HH	HH	CV	CV	CV	CV	CV
1959	28	0.15353	0.15906	0.1456	0.10594	0.17558	2.30649	2.36858	2.20508	1.58324	2.59091
1960	28	0.15512	0.12919	0.13431	0.09126	0.1513	2.30507	1.93807	2.01573	1.21535	2.25477
1961	28	0.1592	0.15023	0.15251	0.24333	0.18915	2.38285	2.25783	2.29024	3.33482	2.75964
1962	28	0.17988	0.12273	0.15195	0.76728	0.17153	2.60784	1.83514	2.26347	6.48746	2.50979
1963	28	0.17457	0.13999	0.15194	0.09226	0.17364	2.54592	2.09874	2.26326	1.24003	2.53492
1964	28	0.16115	0.11258	0.14121	0.11104	0.1544	2.38236	1.66082	2.11609	1.63269	2.2957
1965	28	0.16921	0.11942	0.1412	0.10115	0.12179	2.40881	1.7847	2.08087	1.49165	1.8192
1966	28	0.15022	0.11664	0.11693	0.09625	0.14099	2.2177	1.71745	1.74696	1.37549	2.09781
1967	28	0.13783	0.1123	0.12937	0.79448	0.13698	2.05517	1.67658	1.93623	6.40624	2.04354
1968	28	0.13855	0.1193	0.38088	0.10095	0.13908	2.06488	1.78456	4.22497	1.4682	2.07214
1969	28	0.13864	0.22488	0.11104	0.26896	0.15499	2.0662	3.01727	1.64967	3.40232	2.2772
1970	28	0.14083	0.93793	0.36388	0.69239	0.13472	2.07612	6.79765	4.0043	5.77078	1.99729
1973	28	0.14553	0.11459	0.11565	0.08074	0.7367	2.10982	1.70888	1.72428	1.11614	5.80489
1974	28	0.19287	0.09976	0.11279	0.06429	0.10281	2.42972	1.47474	1.64218	0.86844	1.52338
1976	28	0.11816	0.09061	0.0961	0.09133	0.11163	1.67241	1.33782	1.41078	1.34757	1.59945
1977	28	0.11015	0.08827	0.09553	0.08643	0.11098	1.5824	1.30545	1.40342	1.27936	1.592
1979	28	0.10269	0.08362	0.08602	0.06167	0.09959	1.52179	1.23031	1.27065	0.76864	1.47836
1980	28	0.11646	0.10107	0.0915	0.06675	0.10801	1.65372	1.47384	1.34988	0.95769	1.55757
1981	28	0.11069	0.10374	0.09535	0.06708	0.11055	1.58866	1.50659	1.40109	0.96405	1.58708
1982	28	0.12011	0.10033	0.09589	0.06939	0.14144	1.58866	1.50659	1.40109	0.96405	1.58708
1983	28	0.11215	0.09619	0.09623	0.07458	0.13924	1.60536	1.41198	1.41251	1.09696	1.88888
1984	28	0.12567	0.08904	0.09374	0.63884	0.10829	1.75261	1.31615	1.37991	4.67288	1.56081
1985	28	0.11373	0.10739	0.09696	0.05837	0.12288	1.62332	1.55018	1.42186	0.78153	1.72323
1986	28	0.11921	0.44066	0.09235	0.18178	0.10409	1.68384	3.81958	1.36138	2.26348	1.51082
1987	28	0.11829	0.11781	0.09786	0.05663	0.11294	1.70792	1.70223	1.44869	0.66892	1.64395
1988	28	0.11511	0.08611	0.08594	0.10765	0.09263	1.63876	1.27474	1.27237	1.55325	1.36509
1989	28	0.10354	0.08877	0.08199	0.05554	0.11083	1.50415	1.3124	1.21429	0.71219	1.60454
1990	28	0.09902	0.0816	0.0802	0.1448	0.098	1.43808	1.2073	1.18692	1.91635	1.42564
1991	28	0.105	0.07712	0.07918	0.07471	0.08901	1.50918	1.14057	1.17178	1.10293	1.31574
1992	28	0.1149	0.08213	0.07891	0.07627	0.10457	1.62004	1.21502	1.16767	1.12742	1.5042
1993	28	0.10382	0.09466	0.08284	0.05781	0.13314	1.49546	1.38403	1.22525	0.79008	1.80661
1994	28	0.10615	0.13543	0.08262	0.06526	0.10773	1.5225	1.8287	1.22201	0.94086	1.56716
1995	28	0.11458	0.10428	0.09014	0.05389	0.10681	1.60016	1.48799	1.31851	0.7205	1.51633

Table: D.6.7 HH and CV Measures of Dispersal for 1959-95 for Leather Industry (IN29) for Trend Analysis

		No units			K/L	NVA	No units		No Emplys		NVA
Year	Industry	HH	HH	HH	HH	HH	CV	CV	CV	CV	CV
1959	29	0.35331	0.42116	0.42286	0.33367	0.55157	5.38145	6.92696	6.96118	4.84309	9.5797
1960	29	0.43814	0.51282	0.43791	0.26634	0.41547	7.26232	8.58353	7.2579	2.14037	6.81086
1961	29	0.54816	0.68843	0.57555	0.54373	0.52138	6.36396	12.5884	7.97129	6.06419	4.24079
1962	29	0.48169	0.89237	0.47589	0.50808	0.43291	7.89826	15.3322	7.74256	8.57215	6.47091
1963	29	0.38012	0.48461	0.48765	0.28251	0.41816	6.03955	8.10989	8.16219	3.01901	6.86592
1964	29	0.37236	0.44976	0.4546	0.25347	0.40059	5.85675	7.48321	7.57333	1.01	6.4973
1965	29	0.38816	0.43146	0.42531	0.25972	0.35618	6.22349	7.13222	7.01029	1.65032	5.45587
1966	29	0.33033	0.37877	0.39208	0.96604	0.39005	5.24677	4.10088	6.15754	1.66599	6.12974
1967	29	0.38067	0.38399	0.40017	0.24245	0.3757	6.16328	6.21957	6.48741	2.98753	6.07788
1968	29	0.45218	0.44422	0.40145	0.26042	0.39344	7.52846	7.37874	6.51579	1.70938	6.34127
1969	29	0.3698	0.36177	0.34897	0.21995	0.6525	5.97495	5.83199	5.59648	2.04828	9.75391
1970	29	0.36843	0.31965	0.36422	0.226	0.37679	5.9509	5.01559	5.87592	2.33816	6.09673
1973	29	0.20898	0.36444	0.2873	0.45892	0.72443	3.20756	5.16059	4.30367	6.04681	8.02964
1974	29	0.30014	0.25456	0.26397	0.11287	0.37811	4.32462	3.80037	3.91433	1.09652	5.09781
1976	29	0.206	0.22115	0.23577	0.24505	0.27909	3.06248	3.24597	3.41391	3.51629	3.86868
1977	29	0.25624	0.24533	0.23052	0.20026	0.28661	3.37457	3.27607	3.1373	2.83283	3.63485
1979	29	0.25305	0.25943	0.23161	0.13566	0.2304	3.26859	3.32286	3.14779	2.03577	3.13617
1980	29	0.21181	0.20841	0.21074	0.11951	0.25596	2.95275	2.91797	2.94184	1.78168	3.37212
1981	29	0.24906	0.23105	0.25691	0.10902	0.26009	3.31004	3.14239	3.38056	1.59506	3.40867
1982	29	0.2746	0.26717	0.24765	0.1031	0.25881	3.31004	3.14239	3.38056	1.59506	3.40867
1983	29	0.28286	0.30708	0.24311	0.09345	0.2939	3.69839	3.90445	3.33265	1.0762	3.89951
1984	29	0.2957	0.23861	0.26771	0.08458	0.23754	3.70925	3.21388	3.47523	1.03748	3.20388
1985	29	0.29615	0.19939	0.2542	0.09329	0.23206	3.6194	2.77037	3.27838	1.26462	3.15208
1986	29	0.32857	0.24669	0.25915	0.07101	0.27332	3.86237	3.21356	3.3205	0.69065	3.43804
1987	29	0.34938	0.23489	0.26881	0.08341	0.25058	4.24045	3.25184	3.57337	0.88039	3.4044
1988	29	0.31969	0.28453	0.27703	0.11345	0.287	3.79736	3.52824	3.46817	1.69022	3.54783
1989	29	0.32023	0.27476	0.29821	0.10558	0.22584	3.90282	3.53563	3.72951	1.48648	3.16056
1990	29	0.36384	0.31393	0.30262	0.108	0.21893	4.22512	3.85401	3.76482	1.57582	3.02438
1991	29	0.67725	0.28657	0.33187	0.09984	0.30005	5.87088	3.5444	3.88621	1.41175	3.7443
1992	29	0.39806	0.28309	0.27713	0.09221	0.28727	4.3375	3.51674	3.46891	1.29064	3.54998
1993	29	0.37526	0.2273	0.34623	0.09294	0.36694	4.07833	2.97587	3.88672	1.33914	4.02433
1994	29	0.39038	0.21637	0.32756	0.23663	0.23216	4.17463	2.87769	3.75841	3.05711	3.01848
1995	29	0.36633	0.24611	0.29991	0.10166	0.25809	3.92097	3.07031	3.4768	1.51029	3.16533

Table: D.6.8 HH and CV Measures of Dispersal for 1959-95 for Chemicals Industry (IN30) for Trend Analysis

		No units			K/L	NVA	No units		No Emplys		NVA
Year	Industry	HH	HH	HH	HH	HH	CV	CV	CV	CV	CV
1959	30	0.23083	0.6815	0.43876	0.51916	0.48721	3.57996	8.17678	6.13982	6.88359	6.59676
1960	30	0.22489	0.64266	0.43516	0.45511	0.46596	3.46424	7.88623	6.10438	6.29763	6.40029
1961	30	0.30982	0.64515	0.49524	0.41794	0.49118	4.83757	8.39078	7.02797	6.20952	6.98735
1962	30	0.22358	0.45727	0.38538	0.21931	0.51605	3.44152	6.31826	5.59306	3.36617	6.85436
1963	30	0.22122	0.45718	0.2829	0.20983	0.4384	3.4001	6.31736	4.35553	3.19247	6.13615
1964	30	0.2252	0.38694	0.34669	0.20292	0.32062	3.46957	5.60978	5.16081	3.05957	4.84786
1965	30	0.21967	0.32455	0.33735	0.18658	0.31828	3.37261	5.05093	4.8188	2.7201	4.8188
1966	30	0.2053	0.33228	0.31694	0.20619	0.27595	3.14675	4.8219	4.65166	3.16144	4.16272
1967	30	0.22292	0.24538	0.32165	0.90938	0.24148	3.4284	3.75701	4.70453	9.16065	3.70207
1968	30	0.18296	0.2946	0.28239	0.18175	0.39851	2.78422	4.26425	4.12837	2.76394	5.28147
1969	30	0.19433	0.91493	0.40435	0.49285	0.27534	2.94919	8.32465	5.13428	5.81408	3.9383
1970	30	0.16155	0.25611	0.22827	0.17202	0.28386	2.44537	3.63451	3.32882	2.60398	3.91552
1973	30	0.14548	0.18475	0.191	0.09351	0.16003	2.17581	2.66331	2.73291	1.26996	2.36819
1974	30	0.13705	0.14511	0.15151	0.07938	0.15738	2.00793	2.10487	2.17876	1.08559	2.2444
1976	30	0.13966	0.15231	0.13717	0.11207	0.15313	2.03975	2.18783	2.00933	1.6721	2.19705
1977	30	0.12399	0.19764	0.1382	0.11934	0.14414	1.82591	2.60292	1.99954	1.76544	2.06773
1979	30	0.10286	0.11257	0.10314	0.09279	0.25463	1.52408	1.65261	1.52797	1.37819	2.95038
1980	30	0.11341	0.12463	0.17792	0.1414	0.27142	1.68509	1.83406	2.4195	2.03654	3.19721
1981	30	0.11708	0.12345	0.13676	0.07075	0.20579	1.70907	1.78575	1.93608	0.98633	2.579
1982	30	0.11571	0.11101	0.12393	0.07245	0.1705	1.70907	1.78575	1.93608	0.98633	2.579
1983	30	0.11497	0.13481	0.13257	0.06259	0.19332	1.68293	1.91479	1.89	0.79342	2.47525
1984	30	0.11379	0.13502	0.13005	0.06494	0.18734	1.6681	1.91711	1.86183	0.85352	2.42388
1985	30	0.11123	0.20597	0.1247	0.06735	0.18005	1.6355	2.58046	1.80035	0.91079	2.35979
1986	30	0.11845	0.16008	0.13333	0.06973	0.20826	1.72585	2.17459	1.89849	0.96413	2.59906
1987	30	0.11468	0.15745	0.13209	0.06894	0.1879	1.67921	2.14905	1.88462	0.94684	2.42871
1988	30	0.11168	0.13919	0.1265	0.06422	0.19064	1.62856	1.9375	1.80155	0.867	2.41125
1989	30	0.1157	0.16205	0.13483	0.06516	0.21957	1.66154	2.12902	1.86868	0.91031	2.59451
1990	30	0.10441	0.1647	0.12523	0.05946	0.18483	1.52624	2.1527	1.76778	0.78154	2.32457
1991	30	0.10234	0.13911	0.11865	0.062	0.13098	1.50934	1.9367	1.71205	0.81392	1.85072
1992	30	0.10676	0.15809	0.12248	0.0523	0.21669	1.55534	2.09314	1.73784	0.58078	2.57321
1993	30	0.36694	0.11212	0.16893	0.12241	0.05747	4.02433	1.61988	2.18993	1.737	1.02
1994	30	0.11298	0.14339	0.12718	0.06385	0.17576	1.63	1.95428	1.78872	0.88242	2.2487
1995	30	0.12613	0.21079	0.1428	0.06395	0.21147	1.79745	2.57321	1.97445	0.86075	2.57844

Table: D.6.9 HH and CV Measures of Dispersal for 1959-95 for Rubber, Petroleum and Coal Industry (IN31) for Trend Analysis

		No units			K/L	NVA	No units		No Emplys		NVA
Year	Industry	HH	HH	HH	HH	HH	CV	CV	CV	CV	CV
1959	31	0.16125	0.17634	0.15581	0.10155	0.24932	2.44346	2.67287	2.35853	1.56759	3.56239
1960	31	0.19389	0.19838	0.17148	0.11418	0.66251	2.90739	2.96575	2.59598	1.53561	6.65435
1961	31	0.19458	0.17547	0.38759	0.18284	0.26504	2.91639	2.65408	4.82303	2.75818	3.72719
1962	31	0.20153	0.16366	0.16985	0.153	0.2562	2.9551	2.46547	2.55192	2.309	3.54458
1963	31	0.20029	0.19033	0.19591	0.09811	0.28985	2.94043	2.81918	2.88776	1.21861	3.86296
1964	31	0.13972	0.17035	0.18536	0.11658	0.2539	2.09786	2.55885	2.75668	1.66721	3.52179
1965	31	0.18616	0.20807	0.18504	0.10162	0.26262	2.76692	3.0317	2.75273	1.31554	3.60754
1966	31	0.19462	0.20291	0.173	0.15209	0.19734	2.82304	2.91648	2.56337	2.2843	2.85409
1967	31	0.16157	0.19671	0.18347	0.10957	0.23202	2.43566	2.8974	2.73265	1.51261	3.29692
1968	31	0.15943	0.20926	0.17375	0.09292	0.25156	2.4046	2.81201	2.60505	1.05878	3.49849
1969	31	0.20196	0.21098	0.17699	0.09837	0.20949	2.90587	3.00463	2.6132	1.32023	2.98852
1970	31	0.18515	0.20215	0.11184	0.13512	0.2384	2.66787	2.8528	1.64723	2.0279	3.2119
1973	31	0.75222	0.17705	0.16307	0.08746	0.31898	5.87063	2.45157	2.30625	1.25631	3.60993
1974	31	0.12414	0.1378	0.14998	0.11571	0.24432	1.79384	1.94733	2.07467	1.69211	2.93277
1976	31	0.12405	0.13062	0.14543	0.11894	0.25225	1.8104	1.88901	2.05525	1.74682	2.93341
1977	31	0.1111	0.13304	0.14524	0.11464	0.25752	1.64454	1.91724	2.0532	1.69145	3.03075
1979	31	0.12226	0.21423	0.22645	0.13928	0.12704	1.78843	2.69621	2.79471	1.98792	1.84661
1980	31	0.13169	0.22991	0.15406	0.10884	0.16516	1.85836	2.71792	2.08557	1.59327	2.18951
1981	31	0.1141	0.14415	0.11691	0.09704	0.11951	1.67198	2.01476	1.70696	1.44155	1.73874
1982	31	0.12124	0.12738	0.12475	0.0791	0.12269	1.67198	2.01476	1.70696	1.44155	1.73874
1983	31	0.10658	0.12761	0.13537	0.08208	0.18972	1.56458	1.81388	1.89761	1.21106	2.40368
1984	31	0.11371	0.3017	0.10866	0.18061	0.12432	1.65334	3.20344	1.59102	2.32647	1.77715
1985	31	0.10251	0.10459	0.10369	0.08893	0.82866	1.51928	1.5478	1.53551	1.31806	5.73087
1986	31	0.10756	0.09713	0.10504	0.0884	0.135	1.57712	1.43852	1.54481	1.31139	1.89366
1987	31	0.10099	0.10403	0.09627	0.09279	0.14595	1.49127	1.53157	1.42648	1.37686	2.00616
1988	31	0.10207	0.08956	0.095	0.16215	0.13633	1.49664	1.32728	1.40339	2.1299	1.88402
1989	31	0.09979	0.11093	0.09366	0.07834	0.11568	1.47514	1.61926	1.38938	1.14754	1.67703
1990	31	0.09207	0.11066	0.0826	0.06926	0.15126	1.36628	1.6159	1.21968	0.97645	2.05847
1991	31	0.0906	0.09111	0.08306	0.0699	0.11468	1.34465	1.3522	1.22721	0.98951	1.66499
1992	31	0.08892	0.11393	0.08238	0.08044	0.16428	1.31941	1.656	1.2161	1.18363	2.18143
1993	31	0.09349	0.11353	0.08332	0.06592	0.16362	1.38692	1.65109	1.2315	0.90531	2.17536
1994	31	0.08829	0.11628	0.08009	0.06238	0.17544	1.30877	1.66825	1.18296	0.85014	2.28155

1995	31	0.09452	0.12184	0.08808	0.05986	0.1521	1.39684	1.73074	1.30577	0.79133	2.03775

Table: D.6.10 HH and CV Measures of Dispersal for 1959-95 for Non-Metallic Mineral Products Industry (IN32) for Trend Analysis

		No units			K/L	NVA	No units		No Emplys		NVA
Year	Industry	HH	HH	HH	HH	HH	CV	CV	CV	CV	CV
1959	32	0.10855	0.10791	0.10684	0.09622	0.1148	1.56293	1.53978	1.5225	1.30408	1.67797
1960	32	0.10576	0.09097	0.09489	0.10182	0.10092	1.49039	1.12449	1.23196	1.40213	1.38133
1961	32	0.1098	0.13365	0.1117	0.13087	0.12658	1.51792	1.99389	1.5611	1.94438	1.86558
1962	32	0.11263	0.141	0.11543	0.12837	0.16455	1.63252	2.12153	1.68725	1.91928	2.45443
1963	32	0.10661	0.11433	0.10787	0.10667	0.1096	1.50866	1.66604	1.53531	1.50996	1.57151
1964	32	0.1018	0.11248	0.1145	0.11248	0.10065	1.40182	1.62971	1.66927	1.62971	1.37499
1965	32	0.10259	0.11213	0.09836	0.09969	0.10029	1.41985	1.62258	1.31994	1.35217	1.36639
1966	32	0.10235	0.10958	0.69201	0.15834	0.10417	1.46412	1.63329	6.12907	0.26648	1.501
1967	32	0.09911	0.09983	0.09233	0.08573	0.09866	1.39611	1.41144	1.24154	1.07024	1.38632
1968	32	0.0984	0.10776	0.08946	0.0894	0.08948	1.38076	1.57123	1.17021	1.16858	1.17077
1969	32	0.10155	0.80095	0.09381	0.6156	0.09294	1.44757	6.64149	1.27685	5.74241	1.25626
1970	32	0.10825	0.14904	0.09742	0.09348	0.10091	1.60153	2.20278	1.3992	1.31795	1.46749
1973	32	0.09723	0.08781	0.09023	0.13113	0.09792	1.44348	1.28196	1.32546	1.91507	1.45457
1974	32	0.11299	0.09059	0.10066	0.33804	0.31414	1.66973	1.34033	1.49747	3.57066	3.41928
1976	32	0.1201	0.08555	0.09155	0.10086	0.092	1.76144	1.25434	1.34854	1.50109	1.35617
1977	32	0.1109	0.07837	0.09081	0.11234	0.08716	1.61899	1.1482	1.34766	1.63661	1.29243
1979	32	0.09872	0.07492	0.08164	0.09102	0.08289	1.46054	1.0863	1.20376	1.35079	1.22438
1980	32	0.10855	0.08589	0.08383	0.11392	0.15015	1.57713	1.27333	1.24205	1.64097	2.01939
1981	32	0.10481	0.09463	0.08016	0.10186	0.08666	1.53123	1.39841	1.18422	1.49386	1.28473
1982	32	0.09642	0.09675	0.0821	0.10006	0.08657	1.53123	1.39841	1.18422	1.49386	1.28473
1983	32	0.09316	0.09915	0.08026	0.24521	0.10223	1.3781	1.45877	1.1857	2.77701	1.49859
1984	32	0.09541	0.08834	0.0813	0.14912	0.10983	1.40893	1.30952	1.20249	2.00955	1.59259
1985	32	0.09329	0.09623	0.08047	0.0875	0.08433	1.37986	1.42006	1.18914	1.2972	1.24963
1986	32	0.09312	0.10443	0.07972	0.0911	0.08626	1.38155	1.53688	1.17137	1.35204	1.27828
1987	32	0.09087	0.11043	0.07717	0.103	0.0931	1.346	1.59979	1.13491	1.50843	1.37731
1988	32	0.0908	0.1199	0.07887	0.08929	0.08368	1.345	1.70919	1.16311	1.32328	1.23967
1989	32	0.09027	0.1173	0.0787	0.08183	0.09831	1.33305	1.66298	1.16364	1.21188	1.44778
1990	32	0.08184	0.1081	0.07466	0.07557	0.09272	1.21091	1.5717	1.0917	1.10767	1.37194
1991	32	0.0895	0.11098	0.07912	0.06822	0.09741	1.31701	1.57714	1.17078	0.99443	1.42772
1992	32	0.09011	0.11054	0.07912	0.07251	0.08855	1.32516	1.57223	1.17081	1.06737	1.30938
1993	32	0.08402	0.09758	0.07426	0.11445	0.09732	1.23802	1.41017	1.09739	1.59884	1.40717
1994	32	0.09068	0.14919	0.10504	0.07167	0.17738	1.3433	2.01026	1.534	1.03819	2.29858

1995	32	0.09168	0.10231	0.07912	0.0668	0.09671	1.33798	1.46561	1.1695	0.97644	1.39977

Table: D.6.11 HH and CV Measures of Dispersal for 1959-95 for Basic Metals and Alloys Industry (IN33) for Trend Analysis

		No units			K/L	NVA	No units		No Emplys		NVA
Year	Industry	HH	HH	HH	HH	HH	CV	CV	CV	CV	CV
1959	33	0.19722	0.40828	0.2772	0.12031	0.30285	2.85934	4.66817	3.64871	1.78592	3.86936
1960	33	0.21381	0.395	0.25993	0.82655	0.30457	3.03498	4.57524	3.49207	6.98931	3.88364
1961	33	0.21722	0.4001	0.27788	0.14064	0.33428	3.2592	5.09932	3.96537	2.04509	4.52411
1962	33	0.19952	0.22935	0.20834	0.22935	0.34637	2.93122	2.99386	3.03476	3.2684	4.34557
1963	33	0.18762	0.22963	0.20291	0.14246	0.28933	2.74164	3.19913	2.91649	2.14363	3.7545
1964	33	0.17741	0.22286	0.20326	0.13687	0.23911	2.61847	3.12993	2.92038	2.0576	3.2936
1965	33	0.17528	0.21794	0.18993	0.4901	0.21957	2.59199	3.07866	2.76879	5.20432	3.09576
1966	33	0.15983	0.20532	0.17563	0.90375	0.17452	2.33597	2.82976	2.51853	1.83064	2.50607
1967	33	0.15994	0.21072	0.17285	0.12214	0.2108	2.33737	2.88279	2.48736	1.82854	2.8835
1968	33	0.13602	0.19269	0.17182	0.10688	0.19015	2.0143	2.65256	2.43709	1.58925	2.62734
1969	33	0.13753	0.18226	0.15806	0.0893	0.16575	2.034	2.54719	2.28388	1.26574	2.37073
1970	33	0.12698	0.17764	0.1603	0.09621	0.14473	1.8928	2.49903	2.30954	1.40186	2.12494
1973	33	0.10067	0.15829	0.14985	0.09394	0.47597	1.49395	2.25438	2.15986	1.37801	4.5605
1974	33	0.1018	0.12773	0.13131	0.11167	0.14992	1.50939	1.83538	1.87596	1.64111	2.10308
1976	33	0.09556	0.20098	0.1314	0.09773	0.11846	1.41986	2.53949	1.87701	1.45168	1.72589
1977	33	0.08919	0.23707	0.12508	0.07994	0.13102	1.32212	2.82249	1.80472	1.16572	1.87273
1979	33	0.08281	0.19642	0.10832	0.07969	0.11448	1.21645	2.50142	1.59761	1.16133	1.67678
1980	33	0.08984	0.19678	0.11707	0.16707	0.1174	1.33327	2.46171	1.69351	2.20687	1.71297
1981	33	0.09156	0.19302	0.11506	0.16372	0.15842	1.35879	2.43096	1.66958	2.17628	2.12692
1982	33	0.09106	0.20109	0.11468	0.22782	0.14606	1.35879	2.43096	1.66958	2.17628	2.12692
1983	33	0.08912	0.18134	0.11895	0.17477	0.15046	1.32239	2.33279	1.71566	2.27571	2.05071
1984	33	0.08902	0.18656	0.12165	0.14585	0.16086	1.31949	2.41709	1.76434	2.03243	2.18217
1985	33	0.08425	0.17477	0.11133	0.37841	0.14514	1.24109	2.31232	1.63683	3.72957	2.02505
1986	33	0.08646	0.18239	0.11368	0.13911	0.1401	1.28146	2.34179	1.65294	1.93669	1.94683
1987	33	0.08744	0.17463	0.11219	0.09466	0.13965	1.2967	2.27442	1.63485	1.40376	1.94221
1988	33	0.08568	0.16456	0.1138	0.09707	0.16689	1.26916	2.18403	1.65439	1.43777	2.20531
1989	33	0.08671	0.17138	0.11054	0.07058	0.15486	1.28538	2.24566	1.61443	1.00319	2.12358
1990	33	0.07936	0.1698	0.10486	0.09175	0.15337	1.16529	2.23153	1.54243	1.36168	2.07892
1991	33	0.08465	0.15241	0.10568	0.08601	0.13287	1.24788	2.09913	1.56248	1.27051	1.89332
1992	33	0.08359	0.13287	0.10883	0.08518	0.11585	1.22994	1.89338	1.60432	1.25682	1.69383
1993	33	0.07818	0.11429	0.09885	0.06958	0.14979	1.14472	1.66034	1.46238	0.98289	2.04413
1994	33	0.07731	0.10885	0.09478	0.06006	0.15163	1.12941	1.59342	1.40548	0.76481	2.09137

1995	33	0.08399	0.11099	0.09965	0.09001	0.12986	1.2445	1.60643	1.4654	1.33366	1.81715

Table: D.6.12 HH and CV Measures of Dispersal for 1959-95 for Metal Products Industry (IN34) for Trend Analysis

		No units			K/L	NVA	No units		No Emplys		NVA
Year	Industry	HH	HH	HH	HH	HH	CV	CV	CV	CV	CV
1959	34	0.18246	0.29388	0.24546	0.08378	0.28322	2.70398	3.79575	3.36062	0.99261	3.70439
1960	34	0.18196	0.32098	0.25349	0.0851	0.30378	2.67411	4.01797	3.43187	0.94053	3.87701
1961	34	0.18494	0.33158	0.24738	0.09293	0.28233	2.78717	4.35655	3.54148	0.85672	3.90054
1962	34	0.20491	0.29649	0.2472	0.10581	0.2677	3.09632	4.15804	3.62544	1.11946	3.85592
1963	34	0.20705	0.31783	0.25135	0.08352	0.30822	2.904	3.88427	3.33081	1.00625	3.80927
1964	34	0.19407	0.3319	0.23614	0.08076	0.29536	2.76643	3.99159	3.1907	0.92005	3.70649
1965	34	0.18477	0.84005	0.23973	0.48211	0.24547	2.61823	6.6026	3.15223	4.85038	3.20288
1966	34	0.17868	0.28915	0.22957	0.991	0.28858	2.46797	3.32424	2.93402	1.133	3.39528
1967	34	0.18023	0.26821	0.2229	0.37444	0.28298	2.48354	3.24347	2.87728	3.97184	3.35421
1968	34	0.18732	0.26595	0.21091	0.09899	0.3449	2.69216	3.45991	2.9436	1.39338	4.08826
1969	34	0.1782	0.25069	0.23612	0.08551	0.25726	2.54691	3.24824	3.11999	1.13578	3.30444
1970	34	0.17552	0.24764	0.21953	0.09582	0.27797	2.55712	3.29717	3.03034	1.32328	3.56274
1973	34	0.13815	0.19838	0.19493	0.07065	0.26158	2.02142	2.65816	2.62579	0.86409	3.19251
1974	34	0.10277	0.16094	0.14179	0.05313	0.23279	1.51506	2.15058	1.9642	0.55426	2.7904
1976	34	0.10333	0.16489	0.14015	0.04942	0.23271	1.52244	2.18701	1.9474	0.39828	2.78983
1977	34	0.09425	0.18529	0.14761	0.07705	0.22612	1.39786	2.36645	2.02265	1.12479	2.68986
1979	34	0.08742	0.15547	0.12265	0.05294	0.22522	1.29369	2.12963	1.77623	0.47305	2.73281
1980	34	0.09623	0.18294	0.14676	0.10713	0.23483	1.42605	2.34646	2.01416	1.57166	2.75391
1981	34	0.09565	0.173	0.1402	0.05129	0.2235	1.41776	2.26006	1.94792	0.48343	2.67024
1982	34	0.10116	0.1612	0.14369	0.0604	0.19619	1.41776	2.26006	1.94792	0.48343	2.67024
1983	34	0.09541	0.14563	0.12705	0.04896	0.22653	1.40901	1.97612	1.78733	0.45797	2.64532
1984	34	0.09828	0.14131	0.0897	0.05478	0.2407	1.44737	1.93384	1.32929	0.65726	2.74578
1985	34	0.09601	0.13023	0.11851	0.05362	0.20982	1.42287	1.84257	1.71046	0.5719	2.56563
1986	34	0.09801	0.1275	0.12104	0.05667	0.20662	1.45082	1.81268	1.73984	0.67031	2.54055
1987	34	0.0996	0.14714	0.11895	0.05827	0.21685	1.47258	2.01794	1.71558	0.71631	2.61994
1988	34	0.09753	0.14531	0.11528	0.05334	0.24438	1.43744	1.97299	1.65679	0.6139	2.77129
1989	34	0.09821	0.12382	0.10212	0.05021	0.14999	1.4464	1.7525	1.4972	0.50743	2.04603
1990	34	0.08759	0.13528	0.09716	0.07473	0.14429	1.2986	1.87337	1.43251	1.09294	1.96309
1991	34	0.09328	0.13507	0.09824	0.05352	0.13553	1.38392	1.89449	1.45398	0.56848	1.89926
1992	34	0.09628	0.15168	0.11193	0.06268	0.14791	1.42676	2.06254	1.63167	0.83065	2.02561
1993	34	0.09321	0.19519	0.11166	0.05961	0.18978	1.38287	2.44876	1.62835	0.753	2.40415
1994	34	0.09068	0.14919	0.10504	0.07167	0.17738	1.3433	2.01026	1.534	1.03819	2.29858
1995	34	0.10343	0.19959	0.12169	0.06835	0.17265	1.51389	2.4429	1.72912	0.97498	2.22214

Table: D.6.13 HH and CV Measures of Dispersal for 1959-95 for MotTr Industry (IN36) for Trend Analysis

		No units			K/L	NVA	No units		No Emplys		NVA
Year	Industry	HH	HH	HH	HH	HH	CV	CV	CV	CV	CV
1959	36	0.14455	0.17867	0.17812	0.08567	0.55884	2.17566	2.59411	2.58915	1.08009	5.43743
1960	36	0.15025	0.19316	0.18202	0.794	0.76689	2.24069	2.75659	2.6324	6.61	6.48565
1961	36	0.15551	0.20654	0.18047	0.07954	0.2256	2.31021	2.89872	2.61462	0.87938	3.08984
1962	36	0.15185	0.17751	0.16057	0.08103	0.1981	2.26213	2.58041	2.375	0.92895	2.80992
1963	36	0.15277	0.16901	0.152	0.08462	0.18596	2.27429	2.47956	2.26406	1.03851	2.67699
1964	36	0.14133	0.17672	0.17716	0.08895	0.20971	2.12655	2.53063	2.61537	1.0648	2.99093
1965	36	0.14548	0.14467	0.16396	0.37118	0.18953	2.15697	2.12427	2.38502	4.16015	2.66869
1966	36	0.13229	0.12928	0.1483	0.87178	0.18405	1.94839	1.90979	2.14195	0.89161	2.52121
1967	36	0.12895	0.12576	0.27342	0.10869	0.17217	1.91995	1.87578	3.35853	1.61905	2.44081
1968	36	0.1301	0.13333	0.13121	0.07797	0.17461	1.93558	1.97895	1.9506	1.00312	2.467
1969	36	0.13121	0.13417	0.13473	0.07191	0.16054	1.95056	1.9901	1.99747	0.82928	2.31228
1970	36	0.13202	0.12725	0.13921	0.08132	0.16288	1.96153	1.89644	2.05557	1.08746	2.33864
1973	36	0.12539	0.11398	0.12757	0.06611	0.16557	1.84371	1.69304	1.87118	0.79362	2.2971
1974	36	0.11051	0.10766	0.11772	0.06361	0.12798	1.63658	1.59756	1.73134	0.77627	1.87628
1976	36	0.11841	0.10867	0.13193	0.21314	0.13368	1.7253	1.60229	1.88291	2.63818	1.92457
1977	36	0.10697	0.10542	0.11433	0.06063	0.12749	1.58792	1.56618	1.68741	0.68582	1.85197
1979	36	0.10127	0.09462	0.10209	0.05572	0.12941	1.50201	1.40589	1.51345	0.58377	1.85456
1980	36	0.11436	0.11016	0.10654	0.05843	0.09707	1.67531	1.62169	1.57401	0.67417	1.44205
1981	36	0.1131	0.1068	0.11108	0.05451	0.13213	1.65934	1.57754	1.63353	0.53824	1.8851
1982	36	0.11513	0.10838	0.1158	0.05851	0.14572	1.65934	1.57754	1.63353	0.53824	1.8851
1983	36	0.10954	0.10538	0.10675	0.05383	0.12057	1.60198	1.54913	1.5668	0.57912	1.73445
1984	36	0.1126	0.10783	0.10818	0.05323	0.12784	1.63986	1.58049	1.58488	0.55816	1.81638
1985	36	0.10603	0.1134	0.10342	0.05509	0.12014	1.56727	1.66312	1.53179	0.56046	1.74633
1986	36	0.11283	0.10877	0.10551	0.05738	0.12435	1.65589	1.60358	1.56027	0.64077	1.79626
1987	36	0.10724	0.10757	0.10309	0.0565	0.11496	1.57302	1.57722	1.51923	0.66512	1.66843
1988	36	0.10374	0.11176	0.10012	0.05147	0.11945	1.52782	1.62959	1.47957	0.49096	1.72143
1989	36	0.10454	0.11278	0.10148	0.0515	0.13232	1.53829	1.64207	1.49791	0.49186	1.9089
1990	36	0.0949	0.10025	0.0923	0.05376	0.13284	1.40719	1.48132	1.36969	0.57681	1.87077
1991	36	0.10299	0.10532	0.09803	0.0567	0.12356	1.51793	1.54835	1.45104	0.67104	1.76865
1992	36	0.10752	0.13766	0.10367	0.06403	0.13576	1.56467	1.89743	1.51695	0.88629	1.87825
1993	36	0.0978	0.10838	0.09501	0.05246	0.13589	1.44101	1.57507	1.40351	0.58611	1.87952
1994	36	0.09491	0.10828	0.09362	0.05932	0.12728	1.40739	1.58616	1.38884	0.74506	1.81024
1995	36	0.10978	0.12125	0.11791	0.06968	0.15485	1.605	1.74222	1.70346	0.98507	2.09313

Table: D.6.14 HH and CV Measures of Dispersal for 1959-95 for Transport Equipment Industry (IN37) for Trend Analysis

		No units			K/L	NVA	No units		No Emplys		NVA
Year	Industry	HH	HH	HH	HH	HH	CV	CV	CV	CV	CV
1959	37	0.18186	0.25639	0.19398	0.06813	0.5506	2.72447	3.5533	2.86537	1.57968	5.76186
1960	37	0.167	0.27529	0.21801	0.10706	0.23741	2.48648	3.63152	3.07937	1.51829	3.27684
1961	37	0.18617	0.22573	0.20864	0.12219	0.22364	2.804	3.29948	3.09516	1.72363	3.27528
1962	37	0.19342	0.22449	0.20115	0.11005	0.23778	2.80926	3.14669	2.89684	1.58072	3.28051
1963	37	0.15206	0.18856	0.20708	0.1112	0.18374	2.28388	2.75272	2.96234	1.60401	2.69551
1964	37	0.15282	0.22083	0.19371	0.08753	0.2243	2.27493	3.04315	2.7626	1.11954	3.07717
1965	37	0.1506	0.18208	0.20491	0.84658	0.17862	2.26318	2.63308	2.93853	7.08138	2.63332
1966	37	0.13802	0.20069	0.44545	0.45054	0.18961	2.05771	2.67953	4.63363	1.00893	2.71764
1967	37	0.16672	0.18957	0.18071	0.08132	0.16052	2.41734	2.66918	2.57445	1.02733	2.34424
1968	37	0.12564	0.17444	0.19069	0.21519	0.15155	1.88152	2.50519	2.68085	2.92588	2.23447
1969	37	0.11894	0.18652	0.167	0.09142	0.15512	1.77894	2.63693	2.42056	1.27331	2.27881
1970	37	0.12473	0.17886	0.19879	0.7887	0.15532	1.86793	2.55418	2.76428	6.38088	2.28129
1973	37	0.10886	0.17448	0.16127	0.16961	0.12999	1.62394	2.38604	2.2869	2.37531	1.91888
1974	37	0.12406	0.16849	0.16443	0.08858	0.14978	1.81061	2.29015	2.25058	1.30673	2.10155
1976	37	0.12613	0.13318	0.13408	0.13242	0.14892	1.81693	1.89684	1.90677	1.88837	2.0925
1977	37	0.1159	0.13381	0.13932	0.13976	0.1469	1.69452	1.90372	1.9637	1.96841	2.04319
1979	37	0.10406	0.17486	0.12047	0.15048	0.14298	1.54061	2.31313	1.75022	2.07975	2.00245
1980	37	0.11879	0.18352	0.15607	0.15064	0.16205	1.71369	2.35144	2.10474	2.05246	2.19356
1981	37	0.11103	0.18809	0.13572	0.11164	0.16849	1.62059	2.39004	1.90132	1.628	2.25445
1982	37	0.10997	0.19471	0.14641	0.15799	0.16315	1.62059	2.39004	1.90132	1.628	2.25445
1983	37	0.1158	0.20125	0.1343	0.09558	0.18325	1.69317	2.54171	1.90919	1.42019	2.38815
1984	37	0.11682	0.21543	0.1317	0.09703	0.19567	1.70581	2.65641	1.88033	1.44139	2.49507
1985	37	0.11233	0.1692	0.11792	0.09365	0.18548	1.6701	2.33369	1.74648	1.38442	2.49135
1986	37	0.11215	0.16278	0.12254	0.10003	0.16378	1.65864	2.2343	1.79184	1.48806	2.24419
1987	37	0.11486	0.15639	0.11685	0.08252	0.17501	1.69443	2.17007	1.72021	1.19977	2.35226
1988	37	0.11172	0.14328	0.12294	0.06899	0.17749	1.64175	2.0056	1.7797	0.94808	2.33689
1989	37	0.1136	0.16006	0.10994	0.06561	0.14207	1.66571	2.17442	1.61889	0.86989	2.0187
1990	37	0.10383	0.1307	0.10338	0.07463	0.12389	1.54354	1.89	1.53707	1.04403	1.80848
1991	37	0.10644	0.12378	0.10496	0.07823	0.14223	1.57276	1.78962	1.55277	1.13456	2.02045
1992	37	0.10525	0.13167	0.09883	0.0681	0.15691	1.56378	1.90131	1.47016	0.89501	2.17533
1993	37	0.10444	0.13746	0.10033	0.07434	0.15335	1.5558	1.99088	1.49289	1.00707	2.16932
1994	37	0.10005	0.13041	0.09937	0.07004	0.1787	1.48845	1.88656	1.47834	0.94181	2.42697
1995	37	0.11025	0.17479	0.10823	0.07679	0.2168	1.63311	2.3502	1.60542	1.08898	2.71716

Table: D.6.15 HH and CV Measures of Dispersal for 1959-95 for Other Manufacturing Industries Industry (IN38) for Trend Analysis

		No units			K/L	NVA	No units		No Emplys		NVA
Year	Industry	HH	HH	HH	HH	HH	CV	CV	CV	CV	CV
1959	38	0.16371	0.25244	0.59676	0.1581	0.78884	2.51267	3.68993	6.52309	2.42686	7.66157
1960	38	0.17044	0.26517	0.23523	0.11182	0.27663	2.58617	3.82818	3.48384	1.32612	3.95214
1961	38	0.18545	0.36813	0.24407	0.11552	0.38503	2.79415	4.66622	3.50558	1.56879	4.80272
1962	38	0.23254	0.24781	0.27748	0.13217	0.34986	3.51919	3.71643	4.07236	1.73368	4.83201
1963	38	0.2237	0.32064	0.24255	0.1135	0.35443	3.34185	4.39549	3.5711	1.37831	4.70764
1964	38	0.20564	0.24391	0.20238	0.12956	0.25387	3.05789	3.5038	3.01688	1.87995	3.61091
1965	38	0.19503	0.24768	0.23506	0.09866	0.3117	2.92227	3.54467	3.40589	1.0825	4.17849
1966	38	0.18432	0.2469	0.23435	1.05355	0.32173	2.74354	3.0767	3.32164	0.92626	4.14207
1967	38	0.19912	0.26204	0.22829	0.15029	0.35834	2.97527	3.6963	3.32908	2.26261	4.58539
1968	38	0.22975	0.25697	0.24392	0.12167	0.34973	3.27267	3.22727	3.42111	1.77093	4.37259
1969	38	0.22517	0.26606	0.20852	0.11317	0.28965	3.22325	3.64082	3.03694	1.59388	3.86119
1970	38	0.23581	0.28558	0.24918	0.09855	0.58743	3.33694	3.82402	3.47454	1.23115	5.98148
1973	38	0.17152	0.58328	0.19422	0.21128	0.93734	2.54458	5.40355	2.81848	3.00787	7.4845
1974	38	0.14277	0.18193	0.15205	0.06911	0.18572	2.10063	2.54381	2.21363	0.7352	2.62843
1976	38	0.22495	0.2374	0.14614	0.08208	0.2136	2.95501	3.06369	2.14232	1.10564	2.85228
1977	38	0.17595	0.14993	0.13372	0.08601	0.15695	2.48121	2.18834	1.98411	1.19541	2.27113
1979	38	0.1655	0.14292	0.11649	0.0824	0.14287	2.26104	2.02806	1.71552	1.19758	2.02745
1980	38	0.18588	0.13909	0.14146	0.08595	0.19226	2.49511	2.00983	2.03722	1.24771	2.55414
1981	38	0.19689	0.13989	0.13119	0.08372	0.14854	2.59621	2.01919	1.91583	1.20524	2.11687
1982	38	0.15453	0.13257	0.12511	0.12224	0.38605	2.59621	2.01919	1.91583	1.20524	2.11687
1983	38	0.14081	0.12658	0.12184	0.08432	0.23657	2.02973	1.8588	1.79828	1.21681	2.93158
1984	38	0.15089	0.10998	0.13065	0.18029	0.20525	2.11327	1.62945	1.8894	2.40143	2.62141
1985	38	0.13231	0.11461	0.11176	0.06158	0.21705	1.79853	1.6169	1.58578	1.06953	2.49082
1986	38	0.14274	0.10199	0.10454	0.06078	0.15475	1.89743	1.47381	1.50391	0.85341	2.00526
1987	38	0.13305	0.13209	0.09974	0.10422	0.15608	1.80576	1.79638	1.44684	1.5001	2.01683
1988	38	0.14228	0.13753	0.10713	0.06352	0.11636	1.89319	1.84869	1.53368	0.90793	1.63582
1989	38	0.13194	0.12383	0.10492	0.19161	0.12917	1.77331	1.69462	1.49517	2.26982	1.78876
1990	38	0.10783	0.09562	0.08786	0.06052	0.11616	1.52763	1.3866	1.28908	0.86149	1.63361
1991	38	0.11366	0.1108	0.10484	0.06082	0.15171	1.59054	1.55992	1.49432	0.86734	2.00597
1992	38	0.11288	0.11741	0.09702	0.05351	0.18109	1.58226	1.62966	1.40348	0.71139	2.19047
1993	38	0.10979	0.13184	0.10161	0.05805	0.20535	1.54904	1.77231	1.45752	0.81171	2.3694
1994	38	0.12827	0.12667	0.10469	0.05438	0.1562	1.73812	1.72259	1.4926	0.73182	1.99016
1995	38	0.1536	0.15027	0.12257	0.05609	0.16112	1.96808	1.9394	1.68204	0.77008	2.03128

Table: D.6.16 HH and CV Measures of Dispersal for 1959-95 for Electricity, Gas and Steam Industries (IN41) for Trend Analysis

		No units			K/L	NVA	No units		No Emplys		NVA
Year	Industry	HH	HH	HH	HH	HH	CV	CV	CV	CV	CV
1959	41	0.1228	0.21408	0.17139	0.22428	0.35211	1.73707	3.16164	2.59463	3.28267	4.53312
1960	41	0.14471	0.21554	0.17638	0.24982	0.23563	2.04407	3.28581	2.67163	3.74168	3.56004
1961	41	0.167	0.22806	0.19665	0.17269	0.18808	2.24633	3.39625	2.93392	2.39375	2.75295
1962	41	0.11493	0.2157	0.14391	0.10453	0.16917	1.67762	2.87153	2.16535	1.46327	2.51454
1963	41	0.1174	0.12238	0.1383	0.10645	0.15549	1.7545	1.83222	2.0615	1.56979	2.28336
1964	41	0.15163	0.11052	0.11793	0.09351	0.1281	2.28815	1.53443	1.69534	1.07814	1.89383
1965	41	0.15118	0.1108	0.11119	0.09857	0.13334	2.28131	1.54087	1.54975	1.23175	1.98849
1966	41	0.14476	0.09643	0.10399	0.92732	0.12466	2.17808	1.37934	1.45143	0.95033	1.85564
1967	41	0.14383	0.09459	0.10266	0.63825	0.13382	2.15297	1.29525	1.47042	5.85966	2.00855
1968	41	0.13726	0.09027	0.09908	0.07695	0.11436	2.04732	1.24783	1.43205	0.90008	1.70522
1969	41	0.14234	0.09694	0.10815	0.83705	0.10898	2.11575	1.38952	1.59982	6.58987	1.59432
1970	41	0.12096	0.08728	0.09601	0.07626	0.89077	1.80726	1.2231	1.39814	0.95733	6.61281
1973	41	0.13167	0.09982	0.0979	0.20474	0.13797	1.97611	1.41131	1.36985	2.87996	2.14417
1974	41	0.08486	0.10119	0.21726	0.23864	0.83503	1.04549	1.44013	3.2293	3.66414	7.58092
1976	41	0.08221	0.08161	0.18467	0.36731	0.20111	1.10871	1.09435	2.6774	5.39557	3.00079
1977	41	0.09107	0.0692	0.17726	0.79079	0.16631	1.34832	0.92183	2.63699	8.45286	2.3769
1979	41	0.09206	0.37672	0.12609	0.14705	0.12292	1.35726	3.8913	1.72013	2.17285	1.82521
1980	41	0.07976	0.07241	0.08171	0.88625	0.14384	1.17775	1.05174	1.2089	0.86999	2.06428
1981	41	0.07788	0.05648	0.15078	0.37454	0.10948	1.15071	0.73585	2.02534	0.36332	1.62979
1982	41	0.08104	0.07661	0.38336	0.33503	0.15298	1.15071	0.73585	2.02534	0.36332	1.62979
1983	41	0.07595	0.06325	0.19181	0.20511	0.14985	1.10516	0.84416	2.83309	3.10237	2.21299
1984	41	0.07959	0.07101	0.21096	0.1626	0.16669	1.09031	0.87433	3.08972	1.66357	2.48252
1985	41	0.07423	0.0848	0.15607	0.72513	0.16214	1.09126	1.25587	2.28892	7.64295	2.39479
1986	41	0.07555	0.07372	0.10056	0.48104	0.16079	1.10728	1.07515	1.4812	4.71093	2.40442
1987	41	0.07987	0.10931	0.11832	0.76598	0.13895	1.17407	1.59914	1.76915	6.28029	2.09008
1988	41	0.08294	0.0768	0.13832	0.34844	0.16422	1.22515	1.12034	2.07469	4.11417	2.45012
1989	41	0.07747	0.0592	0.31159	0.44185	0.11296	1.13994	1.00518	4.73466	6.16991	1.63919
1990	41	0.07487	0.08726	0.17515	0.70221	0.10202	1.10192	1.2912	2.66173	7.17013	1.45732
1991	41	0.07227	0.10249	0.18837	0.86641	0.14136	1.04913	1.50193	2.8629	8.07588	2.12502
1992	41	0.07162	0.12056	0.09717	0.70977	0.22827	1.03723	1.71662	1.39419	6.02415	3.18539
1993	41	0.07201	0.09582	0.21243	0.85887	0.21878	1.03128	1.42017	3.24092	9.38987	2.78622
1994	41	0.07498	0.069	0.11485	0.24248	0.22124	1.09742	1.58776	1.7132	3.17659	2.80676
1995	41	0.09149	0.09009	0.10467	0.89438	0.23692	1.3547	1.33481	1.53768	6.8294	3.42668

APPENDIX E:

Tables Containing 'b' Estimates of Response of Dispersal Measures to TFP, K-Intensity, K-Productivity and L-Productivity in each of the 2-digit Indian Industries for each of the Periods of 10years and a Long Term Period of 40years with its respective, t, F, R^2 and Degrees of Freedom.

Table: E.7.1

Regional Dispersal (HH) of Industries' Output (NVA) in Response to TFP by Solow (at current prices) 1956-1995 Specification: HHnva= a+b(TFP-S)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.146	0.047	1.15	1.322	27	0.454
22	0.225	0.011	0.637	0.4	39	4.602
25	0.268	0.05	1.392	1.936	38	1.436
26	0.065	0.051	0.454	0.747	30	0.083
27	0.034	0.025	7.39	0.546	32	0.046
28	0.189	0.017	0.454	0.206	30	2.101
29	0.299	0.032	0.892	0.796	33	2.794
30	1.145	0.054	1.433	2.053	37	24.278
31	0.09	0.014	0.25	0.062	30	0.579
32	0.351	0.093	1.918	3.678	37	1.325
33	0.433	0.047	1.289	1.661	35	3.989
34	0.405	0.064	1.542	2.378	36	2.563
36	0.167	0.016	0.096	0.009	26	1.743

37	0.279	0.066	1.621	2.629	38	1.179
38	0.045	0.111	0.136	0.019	31	0.018
41	0.38	0.033	1.056	1.115	34	4.376

Table: E.7.2

Regional Dispersal (HH) of Industries' Output (NVA) in response to Capital Intensity (at current prices) 1956-1995 Specification: HHnva= a+b(K/L)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.076	0.053	1.362	1.835	34	0.109
22	0.002	0.063	0.166	0.058	35	0.000
25	0.016	0.009	0.518	0.058	32	0.028
26	0.061	0.127	1.716	2.945	32	0.029
27	0.047	0.098	1.203	1.446	26	0.023
28	0.029	0.105	0.802	0.359	36	0.008
29	0.065	0.046	1.2	1.432	31	0.092
30	0.034	0.006	0.44	0.193	34	0.193
31	0.013	0.014	0.737	0.543	37	0.012
32	0.059	0.025	0.989	0.978	39	0.139
33	0.043	0.032	1.03	1.069	33	0.058
34	0.013	0.043	0.119	0.014	27	0.004
36	0.029	0.178	2.5	4.47	32	0.005
37	0.014	0.01	0.362	0.131	39	0.020
38	0.015	0.105	0.331	0.109	30	0.002
41	0.019	0.103	1.948	3.794	34	0.004

Table: E.7.3

Regional Dispersal (HH) of Industries; Output (NVA) in response to Labor Productivity (at current prices) 1956-1995 Specification: HHnva=a+b(L-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.038	0.02	0.872	0.761	39	0.072
22	0.198	0.359	2.08	4.325	29	0.109
25	0.135	0.014	0.43	0.533	35	1.302
26	0.013	0.097	1.823	3.323	37	0.002
27	0.114	0.24	2.635	3.167	33	0.054
28	0.011	0.049	0.465	1.738	30	0.002
29	0.193	0.306	0.681	7.186	36	0.122
30	0.035	0.032	1.069	1.141	33	0.038
31	0.028	0.237	0.35	10.561	35	0.003
32	0.048	0.235	1.159	1.343	37	0.010
33	0.015	0.191	0.942	3.702	36	0.001
34	0.043	0.65	0.542	2.8	32	0.003
36	0.079	0.338	0.152	4.632	30	0.018
37	0.054	0.015	0.768	0.589	38	0.194
38	0.19	0.25	0.296	3.68	35	0.144
41	0.2	0.234	2.257	5.095	34	0.171

Table: E.7.4

Regional Dispersal (HH) of Industries' output (NVA) in response to Capital Productivity (at current prices) 1956-1995 Specification: HHnva=a+b(K-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.028	0.008	0.537	0.288	39	0.098
22	0.108	0.085	1.726	2.978	33	0.137
25	0.033	0.004	0.374	0.056	38	0.272
26	0.053	0.003	0.285	0.081	32	0.936
27	0.013	0.131	0.904	0.627	30	0.001
28	0.062	0.036	0.994	0.986	31	0.107
29	0.197	0.323	4.26	17.148	39	0.120
30	0.097	0.1	1.533	1.013	25	0.094
31	0.015	0.125	0.205	4.861	35	0.002
32	0.039	0.203	0.518	1.201	36	0.007
33	0.025	0.213	0.78	1.49	36	0.003
34	0.021	0.208	0.539	1.291	33	0.002
36	0.028	0.281	0.598	2.554	30	0.003
37	0.113	0.162	0.214	7.367	35	0.079
38	0.03	0.125	0.109	0.827	31	0.007
41	0.011	0.218	0.171	0.716	35	0.001

Table: E.7.5

Regional Dispersal (CV) of Industries' output in response to TFP by Solow
(at current prices) 1956-95 Specification: CVnva=a+b(TFP-S)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.026	0.133	2.11	4.458	30	0.005
22	0.21	0.101	0.609	0.371	39	0.437
25	0.264	0.043	1.265	1.601	37	1.621
26	0.096	0.011	0.385	0.134	30	0.838
27	0.122	0.014	0.3	0.09	25	1.063
28	0.32	0.028	0.798	0.637	23	3.657
29	0.185	0.018	0.752	0.565	32	1.901
30	0.187	0.082	1.64	2.289	31	0.426
31	0.093	0.052	0.203	0.046	29	0.166
32	0.36	0.035	1.126	1.267	36	3.703
33	0.019	0.014	0.625	0.39	29	0.026
34	0.388	0.059	1.483	2.2	36	2.552
36	0.673	0.601	0.415	0.172	28	0.754
37	0.282	0.066	1.616	2.611	38	1.205
38	0.012	0.003	0.041	0.102	29	0.048
41	0.867	0.189	2.506	6.281	28	3.977

Table: E.7.6

Regional Dispersal of Industry's Output (NVA) in response to Labor Productivity (at current prices) 1956-95 Specification: CVnva=a+b(L-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.063	0.023	0.954	0.91	39	0.173
22	0.245	0.148	0.127	5.34	33	0.406
25	0.082	0.028	1.029	1.079	37	0.240
26	0.126	0.047	1.235	1.526	32	0.338
27	0.107	0.232	0.689	0.633	33	0.049
28	0.108	0.284	0.032	2.064	29	0.041
29	0.725	0.089	1.242	10.511	39	5.906
30	0.224	0.058	1.448	2.014	35	0.865
31	0.325	0.229	0.227	0.775	35	0.461
32	0.064	0.331	1.189	2.186	0.7	0.012
33	0.238	0.177	0.823	7.968	37	0.320
34	0.421	0.659	0.661	44.358	34	0.269
36	0.12	0.374	0.47	6.099	30	0.039
37	0.011	0.165	0.628	2.65	37	0.001
38	0.246	0.154	0.314	1.724	31	0.393
41	0.343	0.208	1.996	3.982	34	0.566

Table: E.7.7

Regional Dispersal(CV) of Industry's Output (nva) in response to CapitalProductivity (at current prices) 1956-95 Specification: CVnva=a+b(K-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.044	0.008	0.549	0.301	39	0.242
22	2.12	0.174	2.832	8.022	39	25.830
25	0.062	0.011	0.178	0.128	31	0.349
26	0.114	0.006	0.443	0.196	32	2.166
27	0.445	0.072	1.575	2.481	33	2.750
28	0.547	0.009	0.927	0.859	37	33.245
29	0.906	0.274	3.788	4.345	39	2.996
30	0.053	0.004	0.39	1.152	36	0.702
31	0.173	0.113	0.148	4.195	34	0.265
32	0.054	0.203	1.248	1.161	37	0.014
33	0.277	0.211	0.688	1.474	36	0.364
34	0.063	0.201	0.134	1.018	35	0.020
36	0.365	0.284	0.635	2.674	30	0.469
37	0.198	0.211	0.623	1.388	35	0.186
38	0.242	0.157	0.393	1.94	31	0.373
41	0.131	0.219	0.171	0.726	30	0.078

Table: E.7.8

Regional Dispersal(CV) of Industries' output(NVA) in response to Capital Intensity (at current prices) 1956-95 Specification: CVnva=a+b(K/L)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.07	0.053	1.46	2.131	39	0.092
22	0.037	0.16	0.609	0.371	32	0.009
25	0.015	0.003	0.251	0.053	31	0.075
26	0.045	0.198	1.165	1.358	32	0.010
27	0.018	0.045	0.396	0.158	28	0.007
28	0.049	0.116	0.966	0.938	34	0.021
29	0.062	0.044	1.132	1.278	29	0.087
30	0.118	0.125	1.964	3.858	28	0.111
31	0.032	0.042	8.399	0.114	24	0.024
32	0.089	0.036	1.193	1.423	39	0.220
33	0.043	0.033	0.993	0.985	33	0.056
34	0.018	0.037	0.544	6.278	25	0.009
36	0.014	0.116	0.201	5.058	30	0.002
37	0.093	0.11	0.646	0.417	39	0.079
38	0.038	0.035	0.897	0.804	33	0.041
41	0.086	0.004	0.394	0.155	36	1.849

Table: E.7.9

Regional Dispersal(HH)of Industries'employment in response toTFP by Solow
(at current prices) 1956-1996 Specification: HHemp=a+b(TFP-S)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.395	0.122	1.344	1.017	37	1.279
22	0.192	0.124	0.685	2.499	39	0.297
25	0.346	0.123	1.889	2.795	37	0.973
26	0.076	0.761	0.541	0.315	33	0.008
27	0.118	0.214	0.098	0.273	30	0.065
28	0.016	0.436	0.671	3.451	31	0.001
29	0.373	0.121	0.701	0.561	38	1.150
30	0.539	0.109	0.667	1.413	36	2.665
31	0.056	0.103	0.371	0.273	28	0.030
32	0.095	0.171	0.774	1.699	35	0.053
33	0.383	0.138	1.093	1.195	31	1.063
34	0.332	0.129	0.901	0.811	29	0.854
36	1.23	0.127	2.26	5.106	36	11.913
37	0.338	0.103	1.125	1.265	38	1.109
38	0.199	0.06	0.562	0.613	29	0.660
41	0.139	0.013	0.662	0.436	36	1.486

Table: E.7.10

Regional Dispersal(CV)of Industries'employment in response toTFP by Solow
(at current prices) 1956-95 Specification: CV emp=a+b(TFP-S)

Industry	$\hat{\beta}$	R^2	t	F	df	$(b/r)^2$
21	1.306	0.108	2.024	4.099	35	15.793
22	0.187	0.108	0.667	0.445	39	0.324
25	2.888	0.218	1.815	1.664	37	38.259
26	1.292	0.515	0.503	0.362	35	3.241
27	0.703	0.107	0.46	0.211	30	4.619
28	0.056	0.06	0.75	2.307	31	0.052
29	1.098	0.231	0.232	1.017	33	5.219
30	0.552	0.131	1.245	1.549	39	2.326
31	0.722	0.222	0.37	0.339	28	2.348
32	0.31	0.11	0.165	0.104	32	0.874
33	3.874	0.138	1.083	1.172	31	108.753
34	3.189	0.131	0.917	1.841	28	77.631
36	0.48	0.016	0.425	0.225	39	14.400
37	0.162	0.034	0.873	0.961	39	0.772
38	1.717	0.011	0.556	1.263	27	268.008
41	0.117	0.015	0.605	0.367	36	0.913

Table: E.7.11

Regional Dispersal(HH)of Industries' employment in response to Labor-productivity (at current prices) 1956-96 Specification: HHemp=a+b(L-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.095	0.321	0.835	0.698	34	0.028
22	0.018	0.111	0.371	1.015	35	0.003
25	0.058	0.116	0.371	1.015	35	0.029
26	0.059	0.221	0.837	1.7	36	0.016
27	0.033	0.028	0.861	0.741	32	0.039
28	0.071	0.022	0.208	2.153	34	0.229
29	0.02	0.332	1.068	1.14	36	0.001
30	0.034	0.177	1.728	2.985	37	0.007
31	0.03	0.08	0.314	0.938	35	0.011
32	0.04	0.032	1.056	1.165	36	0.050
33	0.086	0.026	1.321	1.999	33	0.284
34	0.031	0.051	0.413	1.631	30	0.019
36	0.065	0.504	0.746	0.756	30	0.008
37	0.017	0.016	0.166	0.586	37	0.018
38	0.321	0.118	0.33	1.737	30	0.873
41	0.069	0.124	0.893	1.798	32	0.038

Table: E.7.12

Regional Dispersal(HH)of Industries' employment in response to Capital productivity (at current prices) 1956-96 Specification HHemp=a+b(K-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.029	0.211	0.421	1.049	33	0.004
22	0.232	0.321	2.328	5.422	34	0.168
25	0.016	0.02	0.166	0.124	30	0.013
26	0.041	0.322	0.427	1.351	34	0.005
27	0.021	0.236	1.145	1.31	36	0.002
28	0.017	0.221	0.017	0.106	31	0.001
29	0.066	0.323	0.917	1.84	32	0.013
30	0.062	0.029	0.583	1.34	35	0.133
31	0.012	0.061	0.488	0.215	30	0.002
32	0.093	0.392	2.927	8.567	37	0.022
33	0.064	0.189	0.96	1.77	33	0.022
34	0.047	0.054	1.806	1.706	31	0.041
36	0.031	0.011	0.489	0.478	30	0.087
37	0.041	0.104	0.042	0.771	35	0.016
38	0.038	0.013	0.605	0.442	30	0.111
41	0.036	0.102	0.436	0.204	34	0.013

Table: E.7.13

Regional Dispersal(HH) of Industries'employment in response toCapital Intensity (at current prices) 1956-95 Specification HHemp=a+b(K/L)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.347	0.149	1.329	1.766	35	0.808
22	0.054	0.027	0.23	1.053	37	0.108
25	0.035	0.02	0.508	0.379	30	0.061
26	0.031	0.226	0.533	1.183	32	0.004
27	0.015	0.022	0.028	0.371	30	0.010
28	0.065	0.221	0.307	1.011	32	0.019
29	0.266	0.352	1.431	2.048	34	0.201
30	0.014	0.172	1.626	2.743	35	0.001
31	0.011	0.019	0.049	0.054	32	0.006
32	0.038	0.032	1.044	1.089	36	0.045
33	0.017	0.018	0.148	0.707	32	0.016
34	0.021	0.018	0.739	0.98	30	0.025
36	0.012	0.436	0.898	15.197	30	0.023
37	0.015	0.016	0.204	0.568	30	0.014
38	0.178	0.102	0.365	0.862	30	0.311
41	0.089	0.031	1.021	1.042	32	0.256

Table: E.7.14

Regional Dispersal(CV) of Industries' employment in response to Labor productivity (at current prices) 1956-1995 Specification: CVemp=a+b(L-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.042	0.113	0.677	0.558	36	0.016
22	0.076	0.153	1.257	1.58	32	0.038
25	0.024	0.101	0.217	0.114	33	0.006
26	0.047	0.241	0.559	1.21	36	0.009
27	0.027	0.017	0.497	1.218	32	0.043
28	0.019	0.211	0.222	1.211	31	0.002
29	0.014	0.321	1.047	2.002	32	0.001
30	0.099	0.139	1.318	3.737	35	0.071
31	0.023	0.164	0.428	0.54	31	0.003
32	0.038	0.211	1.153	3.013	35	0.007
33	0.108	0.071	0.894	1.799	33	0.164
34	0.0351	0.12	0.525	0.293	30	0.010
36	0.041	0.058	0.353	0.775	30	0.029
37	0.016	0.015	0.437	0.191	33	0.017
38	0.308	0.127	0.221	0.934	30	0.747
41	0.088	0.117	0.725	0.521	31	0.066

Table: E.7.15

Regional Dispersal(CV) of Industries' employment in response to Capital productivity (at current prices) 1956-95 Specification CVemp=a+b(K-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.012	0.031	0.44	0.021	36	0.005
22	1.72	0.136	1.438	2.067	36	21.753
25	0.082	0.212	0.317	1.147	30	0.032
26	0.433	0.251	0.909	1.825	34	0.747
27	0.476	0.474	0.522	2.317	30	0.478
28	0.017	0.217	0.211	1.143	31	0.001
29	1.466	0.345	1.262	1.593	33	6.229
30	0.053	1.079	0.631	1.398	34	0.003
31	0.015	0.056	0.19	0.15	30	0.004
32	0.861	0.696	3	9	38	1.065
33	0.032	0.205	1.135	1.225	30	0.005
34	0.037	0.316	0.414	0.662	30	0.004
36	0.061	0.075	0.595	0.746	30	0.050
37	0.07	0.106	0.235	0.34	36	0.046
38	0.289	0.015	0.703	0.494	34	5.568
41	0.017	0.04	0.133	1.211	33	0.007

Table: E.7.16

Regional Dispersal(CV) of Industries' employment in response to Capital intensity
(at current prices) 1956-95 Specification: CVemp=a+b(K/L)

Ind.Name	Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
Food	21	0.058	0.135	1.164	1.355	38	0.025
Bever'g	22	0.016	0.211	0.563	0.317	31	0.001
Textiles	25	0.024	0.101	0.217	0.114	30	0.006
Tex.Prd	26	0.044	0.226	0.537	1.191	34	0.009
Wood	27	0.529	0.7	0.564	1.163	30	0.400
Paper	28	0.073	0.221	0.379	1.006	32	0.024
Leather	29	0.078	0.212	0.379	1.006	32	0.029
Chem	30	0.042	0.126	1.643	4.698	35	0.014
Ru-Pe-Co	31	0.018	0.021	0.151	0.205	35	0.015
NmMP	32	0.075	0.321	0.761	1.181	33	0.018
BM&A	33	0.024	0.014	0.732	0.536	33	0.041
Metal Prd	34	0.278	0.165	0.564	2.446	35	0.468
MotTr	36	0.167	0.442	0.951	15.607	30	0.063
Tr.Eq.	37	0.013	0.015	0.232	0.187	36	0.011
OMI	38	0.269	0.111	0.86	1.245	30	0.652
EGC	41	0.327	0.128	0.94	1.984	32	0.835

Table: E.7.17

Regional Dispersal(HH) of Industries' output(NVA) in response to TFP by Solow (at current prices) 1956-1965 Specification: HHnva= a+b(TFP-S)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.401	0.023	0.404	0.163	8	6.991
22	0.729	0.066	0.701	0.494	8	8.052
25	0.727	0.137	1.125	1.286	9	3.858
26	1.057	0.053	0.386	0.844	5	21.080
27	1.022	0.332	1.409	1.985	5	3.146
28	0.152	0.014	0.315	0.099	8	1.650
29	2.479	0.168	1.102	1.213	7	36.580
30	0.126	0.769	1.15	10.1	7	0.021
31	0.061	0.045	0.436	0.19	6	0.083
32	0.807	0.291	1.694	2.872	8	2.238
33	0.207	0.016	0.366	0.132	8	2.678
34	0.048	0.021	0.36	0.201	5	0.110
36	0.4	0.097	0.732	0.535	6	1.649
37	0.135	0.098	0.507	0.651	7	0.186
38	0.018	0.051	0.019	0.07	6	0.006
41	0.274	0.264	0.954	0.909	6	0.284

Table: E.7.18

Regional Dispersal(HH) of Industries's output(NVA) in response to Capital intensity (at current prices) 1956-1965 Specification: HHnva= a+b(K/L)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	2.717	0.465	2.638	6.959	9	15.875
22	0.005	0.014	161	0.784	8	0.002
25	0.57	0.199	0.878	0.872	8	1.633
26	0.475	0.154	0.956	1.913	6	1.465
27	0.087	0.327	0.558	1.426	6	0.023
28	0.078	0.945	2.907	5.82	7	0.006
29	0.448	0.114	0.715	1.517	9	1.761
30	1.649	0.382	1.334	1.78	9	7.118
31	0.045	0.115	0.235	1.018	5	0.018
32	0.107	0.357	0.974	0.105	9	0.032
33	0.913	0.226	1.506	2.267	9	3.688
34	1.297	0.256	1.187	1.408	4	6.571
36	0.452	0.543	0.667	7.115	7	0.376
37	0.499	0.12	0.507	1.165	9	2.075
38	0.567	0.208	0.304	1.042	7	1.546
41	0.276	0.57	0.42	1.103	7	0.134

Table: E.7.19

Regional Dispersal(HH) of Industries' output(NVA) in response to Labor productivity (at current prices) 1956-1965 Specification: HHnva=a+b(L-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.156	0.691	11.169	0.342	6	0.035
22	0.045	0.67	0.027	16.217	9	0.003
25	0.822	0.364	2.033	4.684	9	1.856
26	0.058	0.032	0.312	0.198	5	0.105
27	0.086	0.166	0.891	0.795	5	0.045
28	0.212	0.223	0.513	2.29	9	0.202
29	1.261	0.111	0.792	0.627	6	14.325
30	0.806	0.048	0.636	1.404	6	13.534
31	0.864	0.048	0.636	1.404	6	15.552
32	0.371	0.396	0.919	1.845	7	0.348
33	0.359	0.624	0.968	8.811	7	0.207
34	0.491	0.209	0.783	1.613	7	1.153
36	0.064	0.211	0.431	1.329	6	0.019
37	0.041	0.171	0.341	0.258	8	0.010
38	1.978	0.198	0.739	0.546	6	19.760
41	0.604	0.226	1.313	1.131	6	1.614

Table: E.7.20

Regional Dispersal(HH)of Industries' output(NVA)in response toCapital productivity (at current prices) 1956-1965 Specification: HHnva=a+b(K-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.023	0.238	1.25	1.56	6	0.002
22	0.335	0.451	2.563	6.568	9	0.249
25	0.263	0.291	1.811	3.279	9	0.238
26	0.074	0.375	1.343	1.803	5	0.015
27	0.021	0.321	0.135	1.815	5	0.001
28	0.081	0.01	0.248	1.061	7	0.656
29	0.105	0.203	1.139	1.275	6	0.054
30	0.452	0.151	1.116	1.245	7	1.353
31	0.453	0.217	1.178	1.387	6	0.946
32	0.033	0.116	0.364	1.133	6	0.009
33	0.022	0.314	0.116	1.123	7	0.002
34	0.06	0.423	1.544	2.383	6	0.009
36	0.074	0.383	0.821	1.672	5	0.014
37	0.075	0.194	0.913	1.833	9	0.029
38	0.428	0.369	1.71	2.923	6	0.496
41	0.206	0.154	0.635	1.286	6	0.276

Table: E.7.21

Regional Dispersal of Industries' Output (NVA) inz Response to TFP by Solow

(at current prices) 1956-65 Specification: CVnva=a+b(TFP-S)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.029	0.111	0.789	0.623	6	0.008
22	0.058	0.013	0.439	0.989	6	0.259
25	4.938	0.156	1.215	1.476	9	156.307
26	1.091	0.014	0.179	0.132	5	85.020
27	0.14	0.507	2.027	4.11	5	0.039
28	0.099	0.334	1.416	2.006	5	0.029
29	0.011	0.111	0.161	0.004	6	0.001
30	0.138	0.221	1.155	1.334	6	0.086
31	0.05	0.561	0.731	0.544	5	0.004
32	0.819	0.29	1.69	2.857	8	2.313
33	0.183	0.013	0.33	0.263	7	2.576
34	0.813	0.172	1.021	1.042	6	3.843
36	0.277	0.039	0.405	0.164	5	1.967
37	0.834	0.221	1.408	1.983	8	3.147
38	0.098	0.061	0.089	0.324	6	0.157
41	0.129	0.741	0.69	2.859	5	0.022

Table: E.7.22

Regional Dispersal of Industry's Output (NVA) in response to Labor Productivity
(at current prices) 1956-66 Specification: CVnva=a+b(L-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.439	0.709	0.488	12.165	6	0.272
22	0.605	0.711	0.433	19.652	9	0.515
25	1.249	0.341	2.033	4.134	8	4.575
26	1.064	0.047	0.387	0.149	5	24.087
27	0.161	0.118	0.733	0.537	5	0.220
28	1.099	0.152	0.502	1.079	7	7.946
29	0.013	0.045	0.375	0.14	5	0.004
30	0.454	0.028	0.479	1.229	8	7.361
31	1.454	0.213	1.163	1.353	6	9.925
32	3.1	0.146	0.62	1.385	8	65.822
33	0.898	0.604	0.329	5.425	7	1.335
34	1.636	0.216	0.482	1.079	7	12.391
36	1.821	0.231	0.406	1.193	6	14.355
37	0.579	0.111	0.328	0.378	9	3.020
38	1.256	0.356	0.961	2.924	6	4.431
41	0.969	0.268	1.605	2.305	6	3.504

Table: E.7.23

Regional Dispersal(CV) of Industries'output(NVA)in response toCapital Productivity (at current prices) 1956-65 Specification: CVnva=a+b(K-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.351	0.237	1.245	1.55	6	0.520
22	0.158	0.02	1.247	1.161	9	1.248
25	1.786	0.296	1.836	3.369	9	10.776
26	0.11	0.377	1.347	1.816	5	0.032
27	0.214	0.261	1.187	1.409	5	0.175
28	1.152	0.414	2.378	5.655	8	3.206
29	1.232	0.081	0.784	0.615	7	18.739
30	0.328	0.158	1.145	1.311	7	0.681
31	1.255	0.196	1.106	2.222	6	8.036
32	0.016	0.211	1.109	1.012	6	0.001
33	0.031	0.378	0.417	1.733	7	0.003
34	0.814	0.581	2.15	4.623	6	1.140
36	0.733	0.333	0.777	1.459	5	1.613
37	0.015	0.104	0.368	1.028	8	0.002
38	1.931	0.322	1.542	2.328	6	11.580
41	1.374	0.162	0.777	1.333	6	11.654

Table: E.7.24

Regional Dispersal(CV) of Industries' output(NVA) in response to Capital Intensity
(at current prices) 1956-1965 Specification: CVnva=a+b(K/L)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	1.828	0.458	2.601	6.764	9	7.296
22	0.071	0.231	2.205	1.94	8	0.022
25	1.013	0.481	0.781	0.769	8	2.133
26	0.312	0.288	0.423	2.024	8	0.338
27	0.025	0.334	0.584	0.506	6	0.002
28	0.231	0.614	2.518	5.655	9	0.087
29	2.595	0.222	0.648	1.135	8	30.333
30	1.358	0.326	1.53	2.341	8	5.657
31	0.419	0.317	0.367	1.028	8	0.554
32	1.417	0.193	0.849	0.722	8	10.404
33	1.546	0.346	1.616	2.613	9	6.908
34	1.064	0.632	0.092	0.019	6	1.791
36	1.098	0.546	1.428	2.039	8	2.208
37	1.558	0.834	6.337	4.159	8	2.911
38	0.275	0.37	0.463	1.06	7	0.204
41	0.07	0.64	0.896	0.784	6	0.008

Table: E.7.25

Regional Dispersal(HH)of Industries'employment in response toTFP by Solow
(at current prices) 1956-65 Specification: HHemp=a+b(TFP-S)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.032	0.126	0.567	0.318	9	0.008
22	1.123	0.174	0.803	0.65	8	7.248
25	0.428	0.163	0.734	0.639	9	1.124
26	0.342	0.187	0.832	0.696	5	0.625
27	0.666	0.622	2.801	7.846	5	0.713
28	0.165	0.439	0.773	3.379	8	0.062
29	1.694	0.514	1.303	1.649	6	5.583
30	0.115	0.161	0.728	0.53	9	0.082
31	0.532	0.142	0.568	0.545	7	1.993
32	0.388	0.285	1.261	1.594	8	0.528
33	2.09	0.58	1.927	3.695	5	7.531
34	0.035	0.105	0.265	0.467	5	0.012
36	1.638	0.607	3.046	4.28	7	4.420
37	0.316	0.036	0.646	0.418	9	2.774
38	0.146	0.041	0.416	0.173	5	0.520
41	0.286	0.608	0.56	1.398	5	0.135

Table: E.7.26

Regional Dispersal(CV)of Industries'employment in response toTFP by Solow
(at current prices) 1956-1965 CVvemp=a+b(TFP-S)
Specification:

Industry	$\hat{\beta}$	R^2	t	F	df	$(b/r)^2$
21	1.468	0.126	0.435	2.112	7	17.103
22	1.588	0.216	1.174	1.379	6	11.675
25	1.406	0.183	0.851	0.723	9	10.802
26	1.133	0.903	6.819	46.493	6	1.422
27	0.531	0.686	2.956	8.735	5	0.411
28	1.519	0.136	0.746	0.298	8	16.966
29	1.066	0.192	1.381	1.907	9	5.919
30	1.311	0.216	1.485	2.206	9	7.957
31	1.111	0.603	2.481	6.154	5	2.047
32	4.442	0.417	1.393	1.941	8	47.317
33	0.09	0.021	0.414	0.174	9	0.386
34	0.594	0.331	0.556	1.066	5	1.066
36	0.919	0.656	2.936	8.65	5	1.287
37	0.308	0.047	0.61	0.373	9	2.018
38	0.246	0.459	1.843	3.398	5	0.132
41	0.217	0.245	1.275	1.626	6	0.192

Table: E.7.27

Regional Dispersal(HH) of Industries' employment in response to Labor productivity
(at current prices) 1956-1965 Specification: HHemp=a+b(L-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	1.095	0.378	1.87	3.495	9	3.172
22	0.074	0.666	0.315	9.949	6	0.008
25	0.8	0.562	2.132	4.547	9	1.139
26	2.327	0.598	2.72	7.435	6	9.055
27	0.021	0.352	0.525	1.376	6	0.001
28	1.588	0.024	0.448	0.199	7	105.073
29	1.732	0.502	2.839	8.06	9	5.976
30	0.148	0.541	1.17	4.714	5	0.040
31	0.196	0.194	1.39	1.93	6	0.198
32	1.479	0.519	2.403	5.775	9	4.215
33	1.136	0.088	0.18	0.775	7	14.665
34	0.551	0.077	0.648	0.419	6	3.943
36	1.366	0.589	3.247	10.545	9	3.168
37	0.92	0.387	1.385	1.837	9	2.187
38	0.544	0.681	1.669	2.784	5	0.435
41	1.042	0.668	3.17	10.05	6	1.625

Table: E.7.28

Regional Dispersal(HH) of Industries' employment in response to Capital productivity (at current prices) 1956-1965 Specification: HHemp=a+b(K-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.482	0.305	1.016	1.032	5	0.762
22	0.643	0.903	6.835	48.719	7	0.458
25	1.654	0.394	0.86	0.74	8	6.943
26	0.074	0.257	1.314	1.728	6	0.021
27	0.073	0.397	1.109	1.229	6	0.013
28	0.338	0.378	1.231	1.516	8	0.302
29	0.067	0.25	0.646	1.517	7	0.018
30	0.521	0.897	5.917	35.007	5	0.303
31	0.189	0.044	0.61	0.372	6	0.812
32	0.041	0.566	2.149	4.62	9	0.003
33	0.017	0.593	0.415	1.664	9	0.005
34	0.064	0.019	0.298	0.089	6	0.216
36	0.023	0.302	0.858	3.454	9	0.002
37	0.036	0.194	0.196	0.33	6	0.007
38	0.032	0.363	0.514	1.221	5	0.003
41	0.058	0.199	0.74	1.548	6	0.017

Table: E.7.29

Regional Dispersal(HH) of Industries' employment in response to Capital intensity (at current prices) 1956-1965 Specification: HHemp=a+b(K/L)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	1.974	0.572	3.269	10.687	9	6.812
22	0.351	0.839	5.509	31.198	7	0.147
25	0.505	0.318	0.969	0.94	8	0.802
26	0.194	0.107	0.194	1.138	5	0.352
27	0.625	0.303	1.496	2.236	6	1.289
28	0.36	0.079	0.584	0.341	5	1.641
29	0.078	0.13	1.022	1.044	8	0.047
30	0.25	0.088	8.77	0.768	9	0.710
31	0.061	0.119	0.391	1.037	6	0.031
32	0.516	0.201	0.355	1.548	7	1.325
33	0.731	0.312	1.006	1.012	9	1.713
34	0.375	0.012	0.248	1.06	6	11.719
36	0.145	0.174	3.025	1.05	6	0.121
37	2.616	0.98	15.512	240.623	6	6.983
38	0.523	0.446	1.141	1.302	5	0.613
41	0.356	0.2419	1.14	1.192	5	0.524

Table: E.7.30

Regional Dispersal(CV) of Industries' employment in response to Labor productivity (at current prices) 1956-1965 Specification CVemp=a+b(L-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.451	0.404	1.87	3.495	9	0.503
22	1.905	0.386	1.096	1.204	6	9.402
25	1.017	0.659	2.026	4.104	9	1.569
26	0.501	0.012	0.249	0.062	6	20.917
27	0.514	0.352	0.511	2.281	6	0.751
28	1.321	0.019	0.395	0.156	7	91.844
29	1.237	0.553	2.41	5.807	7	2.767
30	1.297	0.51	1.341	0.165	5	3.298
31	1.06	0.181	1.32	1.77	9	6.208
32	1.266	0.555	1.922	3.693	8	2.888
33	0.013	0.064	0.193	0.08	5	0.003
34	1.339	0.355	1.587	2.52	6	5.050
36	1.954	0.584	3.329	11.085	9	6.538
37	1.308	0.422	1.383	1.913	7	4.054
38	1.987	0.599	2.119	4.489	5	6.591
41	1.311	0.537	1.426	2.033	5	3.201

Table: E.7.31

Regional Dispersal(CV) of Industries' employment in response to Capital productivity (at current prices) 1956-1965 Specification: CVemp=a+b(K-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.247	0.197	0.992	1.983	5	0.310
22	1.207	0.233	0.448	1.062	6	6.253
25	1.591	0.375	1.749	3.059	9	6.750
26	0.4	0.533	2.135	4.568	5	0.300
27	0.314	0.389	1.08	1.167	6	0.253
28	1.953	0.337	0.891	1.794	5	11.318
29	0.776	0.228	0.55	1.202	8	2.641
30	1.571	0.869	5.142	26.44	5	2.840
31	0.15	0.058	0.7	0.482	5	0.388
32	0.531	0.522	1.822	3.32	8	0.540
33	0.236	0.841	6.514	10.934	7	0.066
34	0.142	0.152	0.155	0.912	5	0.133
36	0.039	0.308	0.188	1.564	6	0.005
37	0.205	0.155	0.795	0.463	6	0.271
38	0.369	0.225	0.379	0.479	5	0.605
41	1.035	0.184	0.944	0.892	5	5.822

Table: E.7.32

Regional Dispersal(CV)of Industries' employment inresponseto Capital intensity
(at current prices) 1956-1965 Specification: CVemp=a+b(K/L)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	1.125	0.572	3.269	10.687	8	2.213
22	0.034	0.184	0.394	0.631	6	0.006
25	1.857	0.109	0.94	0.979	8	31.637
26	1.366	0.379	1.564	2.445	5	4.923
27	0.79	0.264	1.34	1.795	6	2.364
28	0.0724	0.188	0.558	1.426	5	0.028
29	0.604	0.704	0.515	1.765	6	0.518
30	0.246	0.081	0.842	0.71	7	0.747
31	0.068	0.141	0.361	1.026	6	0.033
32	0.601	0.091	0.892	0.792	7	3.969
33	0.998	0.314	0.948	1.898	9	3.172
34	0.16	0.291	0.096	0.903	5	0.088
36	0.229	0.216	0.41	0.656	6	0.243
37	1.373	0.985	9.63	185.765	9	1.914
38	1.815	0.437	0.691	0.577	5	7.538
41	0.169	0.184	0.607	0.19	5	0.155

Table: E.7.33

Regional Dispersal(HH) of Industries' output(NVA) in response to TFP by Solow (at current prices) 1966-1975 Specification: HHnva=a+b(TFP-S)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.274	0.041	0.547	3	8	1.831
22	0.074	0.318	0.36	0.263	6	0.017
25	1.307	0.033	0.456	0.207	7	51.765
26	1.392	0.295	1.204	1.45	7	6.568
27	0.065	0.97	2.657	9.187	6	0.004
28	2.911	0.263	1.579	2.494	8	32.220
29	0.425	0.149	0.643	0.414	9	1.212
30	1.915	0.469	2.483	6.178	8	7.819
31	1.37	0.15	0.595	0.354	7	12.513
32	0.025	0.086	0.152	1.842	6	0.007
33	1.164	0.307	1.881	3.54	9	4.413
34	0.941	0.274	1.738	3.02	9	3.232
36	0.042	0.244	1.136	1.29	5	0.007
37	0.111	0.242	1.26	1.598	6	0.051
38	0.235	0.172	0.313	0.133	5	0.321
41	1.539	0.098	0.808	0.653	7	24.169

Table: E.7.34

Regional Dispersal(HH) of Industries's output(NVA) in response to Capital intensity (at current prices) 1966-1975 Specification: HHnva= a+b(K/L)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	3.367	0.906	8.767	76.866	9	12.513
22	0.708	0.41	0.465	0.217	9	1.223
25	0.029	0.116	0.363	1.132	8	0.007
26	0.842	0.279	0.319	1.738	9	2.541
27	0.17	0.168	1.269	1.611	9	0.172
28	0.114	0.111	0.111	1.013	7	0.117
29	0.297	0.581	3.353	11.111	9	0.152
30	0.131	0.154	0.375	0.451	7	0.111
31	0.018	0.113	0.258	1.125	7	0.003
32	0.202	0.114	0.333	1.313	7	0.358
33	1.198	0.565	3.015	9.089	8	2.540
34	1.474	0.056	0.44	0.289	6	38.798
36	0.018	0.486	0.154	0.785	5	0.001
37	0.105	0.378	0.304	4.859	7	0.029
38	0.097	0.722	1.087	1.169	7	0.013
41	0.024	0.161	0.345	1.051	7	0.004

Table: E.7.35

Regional Dispersal(HH) of Industries' output(NVA) in response to Labor productivity (at current prices) 1966-1975 Specification: HHnva=a+b(L-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.454	0.053	1.204	1.444	6	3.889
22	0.101	0.077	0.647	0.419	6	0.132
25	0.113	0.175	0.302	0.694	7	0.073
26	0.186	0.521	0.554	6.521	6	0.066
27	0.186	0.186	1.111	1.934	6	0.186
28	0.032	0.091	0.246	0.161	8	0.011
29	0.01	0.034	0.527	0.278	9	0.003
30	0.06	0.428	0.437	5.937	7	0.008
31	0.074	0.015	0.191	0.136	9	0.365
32	0.027	0.151	0.095	0.109	5	0.005
33	0.092	0.417	0.489	2.215	7	0.020
34	0.091	0.372	0.176	4.733	9	0.022
36	0.011	0.543	0.522	6.362	7	0.002
37	0.09	0.352	1.6	2.69	9	0.023
38	0.896	0.363	1.335	1.782	6	2.212
41	0.32	0.584	2.331	5.977	8	0.175

Table: E.7.36

Regional Dispersal(HH)of Industries' output(NVA) in response toCapital productivity (at current prices) 1966-1975 Specification: HHnva=a+b(K-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.399	0.016	0.207	0.141	8	9.950
22	0.14	0.333	0.423	1.986	9	0.059
25	0.217	0.143	1.156	1.337	9	0.329
26	0.027	0.197	1.215	1.475	7	0.004
27	0.263	0.14	0.865	5.341	6	0.494
28	0.334	0.123	1.258	1.119	9	0.907
29	0.509	0.21	0.153	1.33	6	1.234
30	0.51	0.333	0.012	4.002	6	0.781
31	0.259	0.073	0.792	0.628	9	0.919
32	0.011	0.195	0.646	1.417	5	0.001
33	0.033	0.528	0.976	3.913	7	0.002
34	0.017	0.563	0.211	0.312	8	0.001
36	0.031	0.452	0.186	4.352	7	0.002
37	0.044	0.352	1.199	2.438	9	0.006
38	0.117	0.111	0.249	0.162	7	0.123
41	0.08	0.513	2.371	5.621	9	0.012

Table: E.7.37

Regional Dispersal(CV) of Industries' output(NVA) in response to TFP by Solow
(at current prices) 1966-75 Specification: CVnva=a+b(TFP-S)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	1.009	0.368	1.188	1.412	7	2.767
22	0.08	0.173	0.12	0.257	7	0.037
25	1.134	0.024	0.382	0.146	7	53.582
26	0.162	0.248	1.149	1.321	5	0.106
27	0.065	0.97	12.617	15.918	6	0.004
28	0.146	0.194	0.981	0.962	5	0.110
29	1.234	0.764	5.094	25.949	9	1.993
30	0.841	0.696	2.957	8.743	6	1.016
31	1.54	0.082	0.79	0.624	6	28.922
32	0.165	0.755	1.509	1.623	5	0.036
33	0.049	0.183	1.058	1.119	6	0.013
34	0.917	0.277	1.751	3.065	9	3.036
36	0.02	0.346	1.454	2.115	5	0.001
37	0.019	0.385	0.271	0.333	5	0.001
38	0.124	0.617	2.2	4.842	5	0.025
41	0.536	0.256	1.436	2.061	7	1.122

Table: E.7.38

Regional Dispersal(CV) of Industries' output(NVA) in response to Labor productivity
(at current prices) 1966-75 Specification: CVnva=a+b(L-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	1.161	0.038	0.246	1.06	6	35.472
22	0.12	0.081	0.117	0.014	6	0.178
25	0.053	0.701	0.462	0.136	8	0.004
26	0.026	0.542	0.662	1.089	7	0.001
27	0.716	0.494	1.142	1.301	5	1.038
28	0.436	0.107	0.224	0.05	8	1.777
29	0.034	0.203	0.424	0.033	8	0.006
30	0.039	0.011	0.067	0.105	7	0.138
31	0.031	0.141	0.316	1.411	7	0.007
32	0.788	0.127	0.532	1.11	5	4.889
33	0.038	0.413	0.375	1.892	7	0.003
34	0.078	0.538	0.151	0.303	7	0.011
36	0.012	0.011	0.127	0.022	6	0.013
37	0.59	0.468	0.219	4.178	7	0.744
38	0.134	0.897	4.387	21.375	8	0.020
41	0.945	0.641	3.341	5.671	9	1.393

Table: E.7.39

Regional Dipseral (CV)of Industries'output(NVA)inresponse to Capital Productivity
(at current prices) 1966-75 Specification: CVnva=a+b(K-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.238	0.022	0.407	0.181	7	2.575
22	1.216	0.066	0.746	1.554	9	22.404
25	0.037	0.167	0.026	1.608	7	0.008
26	0.87	0.206	0.34	0.557	7	3.674
27	0.1	0.086	0.026	0.632	6	0.116
28	0.047	0.315	1.516	2.217	6	0.007
29	1.134	0.072	0.684	0.469	7	17.861
30	0.033	0.373	0.183	766	7	0.003
31	1.228	0.068	1.581	0.762	8	22.176
32	0.174	0.147	0.545	1.198	5	0.206
33	0.084	0.509	1.77	0.133	7	0.014
34	0.45	0.661	0.055	1.59	7	0.306
36	0.011	0.118	0.281	0.246	7	0.001
37	0.611	0.473	0.183	4.765	8	0.789
38	0.019	0.255	0.21	1.464	7	0.001
41	0.098	0.76	3.193	1.18	9	0.013

Table: E.7.40

Regional Dispersal(CV) of Industries' output(NVA)in response toCapital Intensity
(at current prices) 1966-1975 Specification: CVnva=a+b(K/L)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	1.14	0.699	4.313	18.598	9	1.859
22	1.804	0.172	1.289	1.662	7	18.921
25	0.019	0.634	0.276	0.88	6	0.001
26	0.883	0.148	0.122	1.145	7	5.268
27	0.491	0.111	0.176	0.106	7	2.172
28	0.114	0.156	0.111	1.115	7	0.083
29	1.521	0.108	0.414	1.146	7	21.421
30	0.011	0.055	0.391	0.488	7	0.002
31	0.093	0.011	0.116	1.116	7	0.786
32	0.016	0.109	0.266	0.271	7	0.002
33	1.51	0.559	2.977	8.861	8	4.079
34	0.311	0.155	0.403	0.173	6	0.624
36	0.051	0.271	0.623	0.633	8	0.010
37	0.411	0.514	0.477	5.649	8	0.329
38	0.033	0.569	0.606	1.367	7	0.002
41	0.869	0.169	0.58	1.431	7	4.468

Table: E.7.41

Regional Dispersal(HH)of Industries'employment in response toTFP by Solow
(at current prices) 1966-1975 Specification: Hhemp=a+b(TFP-S)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.451	0.334	1.57	2.462	6	0.609
22	0.786	0.176	1.305	1.71	9	3.510
25	0.293	0.634	2.94	8.661	6	0.135
26	0.212	0.257	0.601	0.661	6	0.175
27	0.05	0.055	0.623	0.4	7	0.045
28	0.214	0.146	0.335	0.268	6	0.314
29	0.141	0.115	0.213	0.146	5	0.173
30	0.929	0.294	0.815	0.729	7	2.936
31	0.75	0.19	1.169	1.367	6	2.961
32	0.241	0.055	0.541	0.293	6	1.056
33	0.082	0.117	0.322	1.149	7	0.057
34	0.029	0.099	0.135	0.122	6	0.008
36	0.46	0.028	0.46	0.278	8	7.557
37	0.451	0.105	0.217	0.017	5	1.937
38	0.053	0.321	0.312	1.313	6	0.009
41	0.788	0.376	2.194	4.812	9	1.651

Table: E.7.42

Regional Dispersal(CV)of Industries'employment in response toTFP by Solow
(at current prices) 1966-75 Specification CV emp=a+b(TFP-S)

Industry	$\hat{\beta}$	R^2	t	F	df	$(b/r)^2$
21	2.749	0.198	0.891	0.891	7	38.167
22	0.586	0.066	0.838	0.703	9	5.203
25	1.049	0.622	2.336	5.459	6	1.769
26	0.013	0.327	0.971	0.886	7	0.001
27	1.862	0.047	0.493	0.245	6	73.767
28	2.285	0.132	0.444	1.199	6	39.555
29	2.668	0.035	0.523	0.273	9	203.378
30	0.845	0.123	1.685	1.404	9	5.805
31	2.623	0.205	1.243	1.546	7	33.562
32	0.217	0.205	0.204	0.235	5	0.230
33	1.912	0.229	0.521	1.277	7	15.964
34	0.505	0.111	0.254	0.213	7	2.298
36	0.251	0.073	1.021	2.47	7	0.863
37	0.047	0.031	0.151	0.123	7	0.071
38	0.634	0.211	0.381	1.007	7	1.905
41	0.613	0.175	1.302	1.696	9	2.147

Table: E.7.43

Regional Dispersal(HH) of Industries' employment in response to Labor Productivity
(at current prices) 1966-1975 Specification: HHemp=a+b(L-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.367	0.848	6.253	39.102	8	0.159
22	0.631	0.515	2.063	4.254	5	0.773
25	0.339	0.149	0.302	1.302	7	0.771
26	0.345	0.212	0.382	1.146	8	0.561
27	0.596	0.386	1.353	1.031	8	0.920
28	0.666	0.047	0.591	0.349	7	9.437
29	0.178	0.103	0.151	0.10123	7	0.308
30	0.032	0.301	0.431	0.247	6	0.003
31	0.018	0.366	0.384	1.034	6	0.001
32	0.333	0.335	1.044	1.091	6	0.331
33	0.61	0.505	1.845	3.404	6	0.737
34	0.213	0.112	0.308	0.195	7	0.405
36	1.393	0.087	0.652	0.477	6	22.304
37	0.162	0.174	0.606	0.279	5	0.151
38	0.597	0.158	0.7	1.494	8	2.256
41	1.01	0.101	0.19	1.036	7	10.100

Table: E.7.44

Regional Dispersal(HH) of Industries' employment in response to Capital productivity (at current prices) 1966-1975 Specification: HHemp=a+b(K-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.48	0.105	0.371	0.229	7	2.1940
22	0.266	0.377	1.367	1.868	7	0.1870
25	0.041	0.121	0.08	0.082	6	0.0140
26	0.052	0.005	0.187	0.035	8	0.5410
27	0.031	0.021	0.273	0.224	7	0.0458
28	0.087	0.161	1.157	1.339	8	0.0470
29	0.643	0.15	0.649	0.413	9	2.7560
30	0.361	0.155	0.431	1.175	5	0.8410
31	0.401	0.399	0.937	1.877	9	0.4030
32	0.036	0.211	0.253	1.064	7	0.0060
33	0.036	0.124	8.185	0.307	7	0.0150
34	0.019	0.101	0.357	0.113	7	0.0040
36	0.214	0.25	1.235	1.674	7	0.1830
37	0.275	0.225	0.564	1.318	6	0.3360
38	0.391	0.158	0.554	0.564	6	0.9670
41	0.314	0.351	1.796	3.224	7	0.2810

Table: E.7.45

Regional Dispersal(HH) of Industries' employment in response to Capital Intensity (at current prices) 1966-1975 Specification: HHemp=a +b(K/L)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.091	0.103	0.114	0.113	6	0.080
22	0.272	0.155	0.855	0.732	5	0.477
25	0.339	0.149	0.302	1.302	7	0.771
26	0.198	0.453	2.054	4.138	6	0.087
27	0.729	0.411	0.296	1.88	6	1.293
28	0.125	0.019	0.368	0.135	7	0.822
29	0.18	0.105	0.173	0.13	5	0.309
30	0.174	0.067	0.35	0.433	5	0.452
31	0.633	0.014	0.339	0.115	7	28.621
32	0.031	0.196	0.307	1.709	7	0.005
33	0.129	0.128	0.807	6.879	7	0.130
34	0.323	0.8	0.198	5.995	5	0.130
36	0.507	0.302	1.862	3.469	9	0.851
37	0.068	0.161	1.173	1.51	7	0.029
38	0.181	0.14	0.144	0.031	5	0.234
41	0.361	0.224	1.304	1.701	7	0.582

Table: E.7.46

Regional Dispersal(CV) of Industries' employment in response to Labor productivity (at current prices) 1966-1975 Specification: CVemp=a+b(L-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	1.985	0.321	0.356	1.127	6	12.275
22	0.246	0.087	1.549	2.399	7	0.696
25	0.297	0.504	1.455	2.118	5	0.175
26	0.073	0.536	0.402	0.771	6	0.010
27	0.018	0.038	0.56	0.314	7	0.009
28	0.236	1.062	0.88	0.775	8	0.052
29	0.364	0.195	0.585	0.551	5	0.679
30	0.515	0.23	1.22	1.496	5	1.153
31	0.797	0.356	0.418	1.174	7	1.784
32	0.151	0.157	0.341	1.302	6	0.145
33	0.877	0.106	0.932	0.847	7	7.256
34	0.746	0.916	0.554	3.575	5	0.608
36	0.864	0.284	0.499	1.091	6	2.629
37	0.011	0.669	1.104	1.219	6	0.002
38	0.072	0.808	0.248	0.0262	7	0.006
41	1.924	0.325	1.262	1.592	5	11.390

Table: E.7.47

Regional Dispersal(CV) of Industries' employment in response to Capital productivity (at current prices) 1966-1975 Specification: CVemp=a+b(K-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.029	0.106	0.312	0.145	8	0.008
22	2.483	0.422	1.562	2.44	6	14.610
25	0.105	0.2	0.779	1.043	6	0.055
26	0.032	0.003	0.126	0.016	7	0.341
27	0.305	0.028	0.381	0.232	7	3.322
28	0.114	0.393	0.986	0.972	6	0.033
29	0.655	0.042	0.59	0.348	9	10.215
30	0.322	0.256	6.382	1.436	5	0.405
31	2.916	0.303	0.83	0.689	7	28.063
32	0.105	0.161	0.027	0.054	6	0.068
33	0.014	0.15	0.137	0.808	7	0.001
34	0.353	0.169	0.328	0.732	5	0.737
36	0.117	0.002	0.149	0.059	6	6.845
37	0.243	0.12	0.606	0.368	7	0.492
38	1.684	0.218	0.773	0.631	6	13.009
41	1.654	0.475	1.805	3.259	6	5.759

Table: E.7.48

Regional Dispersal(CV) of Industries'employment in response to Capital intensity (at current prices) 1966-75 Specification: CVemp=a+b(K/L)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.635	0.923	9.158	83.865	8	0.437
22	0.47	0.689	3.325	11.054	6	0.321
25	2.509	0.178	0.772	0.696	8	35.366
26	0.384	0.326	0.306	1.011	7	0.452
27	0.469	0.389	1.365	1.863	7	0.565
28	0.442	0.09	0.772	0.569	7	2.171
29	0.144	0.802	10.1	1.121	9	0.026
30	0.322	0.232	0.348	1.818	7	0.447
31	0.442	0.215	0.468	1.028	7	0.909
32	1.011	0.905	0.906	822	6	1.129
33	1.232	0.562	1.685	2.839	6	2.701
34	0.313	0.115	0.345	0.919	7	0.852
36	1.405	0.088	0.65	0.483	6	22.432
37	0.467	0.189	0.516	0.546	6	1.154
38	1.257	0.494	2.296	7.816	9	3.198
41	0.541	0.178	0.654	0.431	5	1.644

Table: E.7.49

Regional Dispersal(HH) of Industries' output(NVA) in response to TFP by Solow
(at current prices) 1976-1985 Specification: HHnva= a+b(TFP-S)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.115	0.038	0.528	0.279	7	0.348
22	1.894	0.011	0.264	0.07	7	326.112
25	0.103	0.11	0.498	0.443	6	0.096
26	0.107	0.991	28.009	784.513	8	0.012
27	0.296	0.022	0.398	0.159	8	3.983
28	0.479	0.397	0.293	1.256	5	0.578
29	0.708	0.069	0.722	0.521	8	7.265
30	0.049	0.27	1.196	1.431	8	0.009
31	0.417	0.075	0.696	0.485	7	2.319
32	1.362	0.146	1.17	1.37	9	12.706
33	0.78	0.656	0.509	1.619	5	0.927
34	1.1	0.474	2.5	3.1	6	2.553
36	0.112	0.113	0.949	0.896	8	0.111
37	0.04	0.355	0.099	0.407	8	0.005
38	0.83	0.126	0.666	0.923	7	5.467
41	0.149	0.056	0.693	0.479	9	0.396

Table: E.7.50

Regional Dispersal(HH) of Industries's output(NVA) in response to Capital intensity
(at current prices) 1976-1985 Specification: HHnva= a+b(K/L)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.404	0.281	1.768	3.124	9	0.581
22	0.056	0.191	0.921	0.949	8	0.016
25	0.023	0.165	0.745	0.556	9	0.003
26	0.044	0.161	0.716	0.513	9	0.012
27	0.059	0.394	1.386	1.921	9	0.009
28	0.076	0.611	1.902	3.617	9	0.009
29	0.035	0.181	0.784	1.614	8	0.007
30	0.02	0.7	0.77	0.598	8	0.001
31	0.34	0.316	1.442	2.081	8	0.366
32	0.038	0.221	0.115	0.171	7	0.007
33	0.068	0.606	3.507	12.301	9	0.008
34	0.566	0.115	0.955	0.972	8	2.786
36	0.031	0.105	0.192	0.137	8	0.009
37	0.061	0.682	3.339	11.15	8	0.005
38	0.059	0.522	0.707	1.568	7	0.007
41	0.046	0.561	0.861	1.742	8	0.004

Table: E.7.51

Regional Dispersal(HH) of Industries' output(NVA) in response to Labor productivity (at current prices) 1976-1985 Specification: HHnva=a+b(L-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.026	0.06	0.504	0.107	6	0.011
22	0.059	0.072	0.789	0.622	9	0.048
25	0.074	0.022	0.211	0.112	9	0.249
26	0.06	0.518	1.193	0.584	7	0.007
27	0.026	0.102	1.39	0.119	8	0.007
28	0.061	0.118	0.58	2.145	9	0.032
29	0.026	0.083	0.848	0.72	9	0.008
30	1.819	0.219	1.498	2.245	9	15.108
31	0.108	0.139	0.53	0.581	7	0.084
32	0.031	0.112	0.338	1.019	8	0.009
33	0.068	0.391	1.376	1.893	9	0.012
34	0.013	0.162	0.724	1.725	7	0.001
36	0.012	0.115	0.208	0.143	7	0.001
37	1.353	0.858	6.951	41.317	7	2.134
38	0.071	0.211	994	1.987	9	0.024
41	0.13	0.132	0.517	1.267	7	0.128

Table: E.7.52

Regional Dispersal(HH) of Industries' output(NVA)in responsetoCapital productivity
(at current prices) 1976-1985 Specification: HHnva=a+b(K-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.209	0.192	1.843	1.71	8	0.2280
22	0.02	0.0158	0.744	0.059	9	0.0250
25	0.023	0.022	0.427	0.182	9	0.0240
26	0.087	0.189	1.269	1.61	8	0.0410
27	0.066	0.013	0.114	0.113	5	0.3350
28	0.022	0.436	0.97	3.879	6	0.0010
29	0.051	0.064	0.742	0.55	9	0.0420
30	0.072	0.012	0.305	1.093	8	0.4320
31	0.062	0.109	0.256	1.065	7	0.0350
32	0.011	0.311	0.304	0.193	7	0.0030
33	0.029	0.241	0.516	1.173	7	0.0040
34	0.016	0.22	0.503	1.163	8	0.0020
36	0.016	0.021	0.293	1.186	7	0.0120
37	0.013	0.011	0.107	0.112	8	0.0150
38	0.174	0.225	1.07	1.145	9	0.1350
41	0.011	0.132	0.517	0.267	7	0.0170

Table: E.7.53

Regional Dispersal(CV) of Industries' output(NVA) in response to TFP by Solow (current prices) 1976-85 Specification: CVnva=a+b(TFP-S)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.049	0.26	1.45	2.1	7	0.009
22	1.024	0.066	0.411	0.353	8	15.888
25	0.047	0.539	2.163	4.68	5	0.004
26	0.107	0.991	28.07	748.51	8	0.012
27	0.019	0.105	0.838	0.702	8	0.003
28	0.067	0.056	0.485	0.235	5	0.080
29	0.024	0.076	0.706	0.493	7	0.008
30	0.063	0.516	2.53	6.4	7	0.008
31	1.354	0.032	0.41	0.168	6	57.291
32	0.018	0.22	1.314	1.726	7	0.001
33	0.58	0.111	0.286	0.682	9	3.031
34	0.0738	0.133	1.035	1.072	8	0.041
36	0.014	0.137	1.065	1.134	7	0.001
37	0.393	0.388	2.254	3.081	9	0.398
38	0.146	0.062	0.679	0.461	8	0.344
41	1.803	0.078	0.711	0.506	7	41.677

Table: E.7.54

Regional Dispersal(CV) of Industries' output(NVA) in response to Labor productivity (at current prices) 1976-85 Specification: CVnva=a+b(L-Productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.05	0.032	1.48	0.231	6	0.078
22	0.687	0.06	0.761	0.58	9	7.866
25	0.315	0.016	0.357	0.127	9	6.202
26	0.065	0.569	0.039	1.238	8	0.007
27	0.551	0.075	0.755	0.57	8	4.048
28	0.225	0.125	1.07	1.146	9	0.405
29	1.734	0.098	0.871	1.758	8	30.681
30	0.122	0.144	0.567	1.322	7	0.103
31	0.312	0.114	0.316	0.141	7	0.854
32	0.519	0.177	0.817	1.768	9	1.522
33	0.668	0.749	3.122	9.745	9	0.596
34	0.148	0.311	0.897	3.597	7	0.070
36	0.222	0.261	0.271	1.52	7	0.189
37	0.784	0.918	8.483	8.92	9	0.670
38	0.607	0.211	0.995	0.989	9	1.746
41	0.305	0.24	0.579	1.315	7	0.388

Table: E.7.55

Regional Dispersal(CV) of Industries' output(NVA) in response to Capital Productivity (at current prices) 1976-85 Specification: CVnva=a+b(K-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.191	0.069	0.72	0.518	8	0.529
22	0.369	0.062	0.726	1.529	9	2.196
25	0.142	0.044	0.604	0.384	8	0.458
26	0.889	0.169	1.192	1.421	8	4.676
27	0.025	0.091	0.895	0.802	5	0.007
28	0.331	0.468	0.199	4.406	6	0.234
29	1.332	0.017	0.374	0.14	9	104.366
30	0.083	0.949	12.256	5.713	9	0.007
31	0.528	0.034	0.597	0.547	7	8.200
32	0.011	0.168	0.366	0.588	7	0.001
33	0.327	0.473	0.557	1.209	8	0.226
34	0.187	0.112	1.002	1.004	8	0.312
36	0.058	0.111	0.172	1.105	7	0.030
37	0.078	0.017	0.233	0.054	9	0.358
38	1.345	0.21	0.941	0.885	9	8.614
41	0.305	0.141	0.579	0.335	7	0.660

Table: E.7.56

Regional Dispersal(CV) of Industries' output(NVA) inresponseto Capitalintensity
(at current prices) 1976-1985 Specification:CVnva=a+b(K/L)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.415	0.289	1.802	3.248	9	0.596
22	0.444	0.132	1.802	3.248	9	1.493
25	0.411	0.114	1.016	1.032	9	1.482
26	0.787	0.109	0.99	0.98	9	5.682
27	0.751	0.166	1.264	1.597	9	3.398
28	0.912	0.452	1.643	2.698	9	1.840
29	0.961	0.147	0.629	0.496	9	6.282
30	0.028	0.074	0.201	0.642	7	0.011
31	1.093	0.333	1.107	1.226	7	3.588
32	0.022	0.111	0.786	0.107	7	0.004
33	0.67	0.578	3.313	10.976	9	0.777
34	0.423	0.356	0.924	0.834	9	0.503
36	0.045	0.025	0.142	0.177	9	0.081
37	0.62	0.74	3.805	4.477	9	0.519
38	0.565	0.314	1.031	1.143	7	1.017
41	0.649	0.315	0.808	0.652	9	1.337

Table: E.7.57

Regional Dispersal(HH)of Industries'employment in response toTFP by Solow
(at current prices) 1976-1985 Specification: HHemp=a+b(TFP-S)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.057	0.021	0.234	0.218	6	0.155
22	1.11	0.113	0.435	1.111	7	10.904
25	0.067	0.664	1.29	2.83	6	0.007
26	0.61	0.186	0.752	0.656	7	2.001
27	0.0596	0.102	0.105	0.111	7	0.045
28	0.221	0.227	0.538	0.292	7	0.215
29	0.336	0.511	0.903	1.866	5	0.221
30	0.687	0.494	1.434	2.027	7	0.955
31	0.65	0.469	1.486	2.208	8	0.901
32	0.203	0.088	0.508	0.251	8	0.468
33	0.479	0.128	0.651	1.103	7	1.793
34	0.247	0.104	0.242	0.15	7	0.587
36	0.494	0.785	0.81	1.655	8	0.311
37	0.043	0.369	0.707	1.367	7	0.005
38	0.049	0.104	0.147	1.022	8	0.023
41	0.454	0.043	0.599	0.358	9	4.793

Table: E.7.58

Regional Dispersal(CV)of Industries'employment in response toTFP by Solow (at current prices) 1976-1985 Specification: CVemp=a+b(TFP-S)

Industry	$\hat{\beta}$	R^2	t	F	df	$(b/r)^2$
21	1.598	0.105	0.504	0.541	7	24.320
22	0.102	0.044	0.189	1.036	9	0.236
25	0.677	0.82	1.77	1.971	6	0.559
26	1.73	0.6	0.621	0.385	7	4.988
27	0.627	0.115	0.175	0.106	7	3.419
28	0.965	0.101	0.188	0.118	8	9.220
29	0.336	0.511	0.903	1.816	5	0.221
30	2.102	0.178	1.317	1.735	9	24.799
31	1.439	0.021	0.411	0.169	9	98.606
32	0.02	0.171	0.908	0.835	8	0.002
33	0.876	0.565	1.433	1.187	7	1.358
34	0.032	0.041	0.252	0.064	8	0.025
36	2.158	0.382	1.793	3.629	8	12.191
37	0.384	0.369	3.35	3.11	8	0.400
38	0.021	0.012	0.159	0.075	7	0.037
41	0.12	0.014	0.43	0.117	9	1.029

Table: E.7.59

Regional Dispersal(HH) of Industries' employment in response to Labor productivity
(at current prices) 1976-85 Specification: HHemp=a+b(L-productivity)

Ind	$\hat{\beta}$	R^2	t	F	df	$(b/r)^2$
21	0.180	0.042	0.594	0.353	9	0.771
22	0.073	0.083	0.113	0.029	6	0.063
25	0.013	0.001	0.063	0.004	8	0.172
26	0.058	0.399	1.41	1.987	9	0.009
27	0.029	0.378	0.757	1.523	8	0.002
28	0.055	0.32	1.046	1.094	9	0.009
29	0.448	0.319	1.496	2.239	9	0.629
30	1.079	0.408	2.349	5.53	9	2.854
31	0.092	0.116	0.616	1.379	6	0.073
32	0.017	0.246	0.621	1.485	8	0.001
33	0.048	0.91	0.882	0.778	9	0.002
34	0.020	0.216	1.485	2.204	9	0.002
36	0.082	0.751	3.474	12.066	5	0.009
37	0.010	0.222	0.415	0.499	8	0.005
38	0.013	0.323	0.531	1.383	8	0.001
41	0.084	0.34	1.007	1.14	8	0.021

Table: E.7.60

Regional dispersal(HH)of Industries'employment in response to Capital productivity
(at current prices) 1976-85 Specification: Hhemp=a+b(K-productivity)

Industry	$\hat{\beta}$	R^2	t	F	df	$(b/r)^2$
21	1.15	0.138	1.132	1.282	9	9.583
22	0.055	0.003	0.116	0.013	5	1.008
25	0.057	0.345	1.166	1.361	7	0.009
26	0.012	0.321	1.19	1.181	7	0.000
27	0.244	0.076	0.755	0.573	8	0.783
28	0.439	0.12	1.046	1.094	9	1.606
29	0.022	0.322	1.048	1.002	8	0.002
30	0.039	0.011	0.3	0.091	9	0.138
31	0.336	0.021	0.359	0.129	7	5.376
32	0.157	0.046	0.621	0.385	9	0.536
33	0.147	0.026	0.43	0.185	8	0.831
34	0.096	0.006	0.227	0.031	9	1.536
36	0.051	0.016	0.593	0.452	6	0.163
37	0.028	0.216	0.465	0.234	8	0.004
38	0.023	0.313	0.5221	0.504	7	0.002
41	0.71	0.206	1.348	1.818	8	2.447

Table: E.7.61

Regional Dispersal(HH) of Industries' employment in response to Capital Intensity (at current prices) 1976-85 Specification: HH emp=a+b(K/L)

Industry	$\hat{\beta}$	R^2	t	F	df	$(b/r)^2$
21	0.362	0.248	1.622	2.634	9	0.528
22	0.256	0.077	0.578	0.334	5	0.851
25	0.133	0.097	0.693	0.48	9	0.182
26	0.059	0.385	1.196	1.429	9	0.009
27	0.273	0.102	0.891	0.794	8	0.731
28	0.026	0.317	0.508	1.095	7	0.002
29	0.332	0.365	1.348	1.817	9	0.302
30	0.0465	0.011	0.084	0.081	8	0.197
31	0.0411	0.003	0.143	0.02	8	0.563
32	0.154	0.036	0.545	0.295	9	0.659
33	0.323	0.076	0.813	0.662	9	1.373
34	0.125	0.01	0.431	1.191	7	1.563
36	0.0279	0.127	0.507	1.165	9	0.006
37	0.0221	0.017	0.423	0.339	8	0.029
38	0.0218	0.325	0.552	1.204	8	0.001
41	0.533	0.163	1.166	1.361	8	1.743

Table: E.7.62

Regional Dispersal(CV)of Industries' employment in responseto Labor Productivity (at current prices) 1976-85 Specification: Cvemp=a+b(L-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.190	0.044	0.605	0.366	9	0.820
22	0.013	0.247	0.57	0.814	5	0.001
25	0.016	0.001	0.077	0.006	7	0.262
26	0.899	0.435	1.567	2.455	9	1.858
27	0.433	0.277	0.764	1.583	8	0.677
28	0.790	0.32	1.04	1.094	9	1.950
29	1.724	0.367	1.255	1.975	9	8.099
30	1.054	0.404	2.327	5.416	9	2.750
31	1.538	0.402	0.756	1.571	6	5.884
32	0.446	0.444	0.61	1.372	8	0.448
33	0.699	0.303	0.857	0.804	8	1.613
34	0.224	0.199	1.411	1.94	9	0.252
36	0.726	0.306	0.846	1.715	8	1.722
37	0.311	0.217	0.534	0.435	7	0.446
38	0.347	0.317	0.533	1.61	7	0.380
41	1.200	0.335	1.116	1.245	9	4.299

Table: E.7.63

Regional Dispersal(CV)of Industries' employment inresponse to Capitalproductivity (at current prices) 1976-85 Specification:CVemp=a+b(K-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	1.228	0.147	1.174	1.379	9	10.258
22	0.073	0.008	0.249	0.062	9	0.666
25	0.289	0.049	0.601	0.362	8	1.705
26	0.061	0.111	0.314	1.104	6	0.034
27	0.248	0.077	0.764	0.583	8	0.799
28	0.456	0.12	1.046	1.094	9	1.733
29	0.669	0.35	0.32	1.04	8	1.279
30	0.043	0.014	0.342	0.117	9	0.132
31	0.05	0.001	0.067	0.004	8	2.500
32	0.171	0.044	0.601	0.372	9	0.665
33	0.12	0.031	0.472	0.223	8	0.465
34	0.135	0.0157	0.348	0.121	9	1.161
36	0.559	0.577	1.909	3.604	6	0.542
37	0.438	0.211	0.504	0.692	7	0.909
38	0.386	0.219	0.367	1.071	8	0.680
41	0.725	0.2	1.414	2	9	2.628

Table: E.7.64

Regional Dispersal(CV)of Industries'employment inresponseto Capitalintensity (at current prices) 1976-85 Specification: CVemp=a+b(K/L)

Industry	$\hat{\beta}$	R2	t	F	df	$(b/r)^2$
21	0.376	0.249	1.624	2.65	9	0.568
22	0.161	0.033	0.548	0.269	9	0.785
25	3.183	0.115	0.954	0.911	8	88.100
26	0.934	0.387	1.358	1.843	9	2.254
27	0.275	0.102	0.893	0.798	8	0.741
28	0.039	0.313	0.522	1.104	8	0.005
29	1.481	0.329	1.091	1.188	9	6.667
30	0.036	0.087	0.215	0.046	8	0.015
31	0.066	0.008	0.254	0.0335	8	0.545
32	0.17	0.035	0.541	0.293	9	0.826
33	0.462	0.142	1.075	1.155	8	1.503
34	0.168	0.018	0.383	0.149	9	1.568
36	0.517	0.315	0.854	1.528	7	0.849
37	0.354	1.211	0.502	0.691	7	0.103
38	0.356	0.116	0.461	1.361	8	1.093
41	0.587	0.18	1.325	1.756	9	1.914

Table: E.7.65

Regional Dispersal of Industries' Output (NVA) in Response to TFP by Solow

(at current prices) 1986-1995 Specification: HHnva=a+b(TFP-S)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.824	0.377	1.981	1.669	8	1.801
22	2.034	0.336	2.011	4.045	9	12.313
25	0.015	0.013	0.626	0.606	8	0.017
26	0.011	0.011	0.197	0.199	7	0.011
27	0.271	0.21	1.363	1.859	8	0.350
28	0.094	0.201	1.229	1.511	7	0.044
29	1.162	0.727	4.614	21.285	9	1.857
30	0.569	0.027	0.474	0.225	9	11.991
31	0.771	0.37	0.276	1.176	5	1.607
32	0.988	0.815	5.928	39.14	7	1.198
33	1.08	0.045	1.574	0.33	8	25.920
34	0.435	0.098	0.806	0.65	7	1.931
36	0.098	0.036	0.547	1.3	7	0.267
37	0.229	0.297	1.851	3.376	9	0.177
38	0.102	0.081	0.804	0.206	7	0.128
41	1.21	0.263	1.692	2.862	9	5.567

Table: E.7.66

Regional Dispersal(HH) of Industries's output(NVA) in response to Capital intensity (at current prices) 1986-1995 Specification: HHnva= a+b(K/L)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.077	0.993	9.134	16.123	7	0.006
22	0.091	0.333	1.772	3.142	8	0.025
25	0.011	0.562	0.997	8.981	8	0.002
26	0.012	0.489	2.243	5.032	9	0.003
27	0.073	0.291	1.192	1.421	8	0.018
28	0.022	0.157	0.694	0.582	8	0.003
29	0.764	0.182	0.844	1.712	8	3.207
30	0.012	0.181	0.781	0.61	8	0.001
31	0.097	0.891	7.348	3.987	9	0.011
32	1.124	0.998	6.02	8.282	7	1.266
33	0.054	0.202	1.233	1.521	7	0.014
34	0.034	0.732	3.307	10.935	5	0.002
36	0.06	0.559	3.184	1.138	9	0.006
37	0.015	0.575	1.743	3.138	8	0.002
38	1.244	0.986	3.824	5.57	8	1.570
41	0.038	0.56	3.19	10.177	9	0.003

Table: E.7.67

Regional Dispersal(HH) of Industries' output(NVA) in response to Labor productivity (at current prices) 1986-1995 Specification: HHnva=a+b(L-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.044	0.74	0.875	1.865	8	0.003
22	0.036	0.044	0.601	1.371	9	0.029
25	0.052	0.397	0.296	5.27	9	0.007
26	0.015	0.561	3.199	10.231	9	0.014
27	0.084	0.21	0.996	0.991	9	0.034
28	0.248	0.21	0.996	1.814	9	0.293
29	0.015	0.224	1.519	2.306	9	0.001
30	0.056	0.198	0.506	1.976	7	0.016
31	0.095	0.538	2.02	4.18	8	0.017
32	0.015	0.321	0.982	1.982	8	0.001
33	0.063	0.722	3.396	11.532	8	0.005
34	0.092	0.264	0.741	2.548	7	0.032
36	0.059	0.556	3.166	10.023	8	0.006
37	0.07	0.292	0.9	1.91	8	0.017
38	0.0137	0.557	2.592	8.728	9	0.002
41	0.301	0.788	4.198	7.62	9	0.115

Table: E.7.68

Regional Dispersal of Industry's Output (NVA) in Response to Capital Productivity

(at current prices) 1986-1995 Specification: HHnva=a+b(K-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.022	0.189	1.365	1.862	9	0.003
22	0.053	0.41	0.088	0.134	7	0.007
25	0.026	0.304	1.818	0.491	7	0.002
26	0.295	0.147	0.731	0.498	9	0.592
27	0.094	0.316	1.66	2.778	7	0.028
28	0.054	0.125	0.549	1.202	9	0.023
29	0.159	0.295	1.829	3.344	9	0.086
30	0.12	0.241	1.596	2.547	8	0.060
31	0.064	0.361	2.124	4.513	8	0.011
32	0.023	0.452	1.644	2.702	9	0.001
33	0.125	0.848	6.25	3.999	8	0.018
34	0.079	0.361	1.238	1.535	9	0.017
36	0.011	0.015	0.191	1.36	7	0.008
37	0.071	0.01	0.188	1.108	8	0.504
38	0.201	0.365	1.689	2.883	9	0.111
41	0.305	0.657	0.175	8.078	9	0.142

Table: E.7.69

Regional Dispersal of Industry's Output (NVA) in Response to TFP by Solow

(at current prices) 1986-95 Specification: CVnva=a+b(TFP-S)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.22	0.051	0.611	0.373	8	0.949
22	1.505	0.254	1.649	2.72	9	8.917
25	0.043	0.08	0.51	0.26	5	0.023
26	0.015	0.041	0.055	1.001	7	0.005
27	0.031	0.215	0.917	1.917	8	0.004
28	0.011	0.186	1.172	1.373	7	0.001
29	0.066	0.149	0.599	3.59	8	0.029
30	0.077	0.038	0.562	0.315	7	0.156
31	1.386	0.812	5.885	34.631	7	2.366
32	0.11	0.812	5.885	34.631	9	0.015
33	0.02	0.157	1.141	1.302	8	0.003
34	0.316	0.027	0.469	0.22	9	3.698
36	0.011	0.04	0.078	0.334	7	0.003
37	0.179	0.352	2.084	4.345	9	0.091
38	0.027	0.088	0.881	0.276	7	0.008
41	1.217	0.272	1.73	2.993	8	5.445

Table: E.7.70

Regional Dispersal(CV) of Industries' output(NVA) in response to Labor productivity (at current prices) 1986-95 Specification: CVnva=a+b(L-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.118	0.122	0.118	0.214	8	0.114
22	0.032	0.027	..468	0.219	9	0.038
25	0.052	0.451	0.584	0.574	8	0.006
26	0.741	0.626	1.658	1.379	8	0.877
27	0.092	0.127	1.078	1.162	9	0.067
28	0.022	0.125	0.784	1.484	9	0.004
29	1.251	0.075	0.806	0.649	9	20.867
30	0.646	0.034	0.534	1.283	7	12.274
31	0.092	0.397	1.839	3.382	8	0.021
32	0.044	0.432	1.345	1.819	7	0.004
33	0.396	0.311	0.937	1.878	7	0.504
34	0.015	0.185	0.316	0.836	7	0.001
36	1.394	0.972	6.612	2.968	9	1.999
37	0.074	0.206	0.976	1.953	9	0.027
38	0.208	0.518	2.347	5.51	9	0.084
41	0.447	0.671	1.258	1.613	8	0.298

Table: E.7.71

Regional Dispersal(CV) of Industries' output(NVA) inresponse to Capitalproductivity

(at current prices) 1986-1995 Specification: CVnva=a+b(K-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.146	0.152	1.198	1.435	9	0.140
22	0.051	0.067	0.176	0.777	8	0.039
25	0.281	0.324	0.49	1.843	8	0.244
26	0.275	0.052	0.66	0.435	9	1.454
27	0.088	0.189	1.325	1.756	7	0.041
28	0.093	0.125	0.776	1.458	9	0.069
29	1.468	0.46	2.61	6.811	9	4.685
30	0.699	0.082	0.847	0.717	9	5.959
31	0.063	0.428	1.978	3.913	9	0.009
32	0.387	0.532	1.542	3.115	8	0.282
33	0.095	0.979	8.078	6.824	8	0.009
34	0.627	0.346	1.171	1.36	8	1.136
36	0.118	0.115	0.189	1.136	8	0.121
37	0.04	0.11	0.063	0.14	8	0.015
38	0.883	0.379	1.824	3.327	9	2.057
41	1.446	0.689	1.383	10.44	9	3.035

Table: E.7.72

Regional Dispersal(CV) of Industries' output(NVA) inresponseto Capitalintensity
(at current prices) 1986-1995 Specification: CVnva=a+b(K/L)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.025	0.194	1.096	1.7	6	0.003
22	0.11	0.334	1.875	3.516	8	0.036
25	0.024	0.428	0.712	2.931	7	0.001
26	0.215	0.441	2.515	6.323	9	0.105
27	0.546	0.293	0.904	0.817	9	1.017
28	0.141	0.217	0.572	1.238	7	0.092
29	0.031	0.218	0.384	0.248	9	0.004
30	0.489	0.116	0.557	1.129	7	2.061
31	1.001	0.897	7.422	8.096	7	1.117
32	1.815	0.979	1.439	2.072	7	3.365
33	0.05	0.322	0.175	1.38	7	0.008
34	0.029	0.585	2.656	7.054	6	0.001
36	0.057	0.566	2.64	6.971	9	0.006
37	0.212	0.493	1.821	3.316	8	0.091
38	1.244	0.471	1.724	2.971	9	3.286
41	0.423	0.454	2.425	5.882	9	0.394

Table: E.7.73

Regional Dispersal(HH)of Industries'employment in response toTFP by Solow (at current prices) 1986-1995 Specification: HHemp=a+b(TFP-S)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.314	0.48	1.749	3.061	7	0.205
22	0.45	0.011	0.224	0.051	8	18.409
25	0.067	0.308	1.47	2.223	6	0.015
26	0.058	0.172	0.622	0.386	6	0.020
27	0.062	0.172	1.196	1.429	8	0.022
28	0.028	0.105	0.149	0.022	8	0.007
29	1.142	0.229	0.689	2.239	8	5.695
30	0.399	0.175	1.304	1.7	7	0.910
31	0.015	0.326	0.416	0.173	7	0.001
32	0.51	0.326	0.416	0.173	7	0.798
33	0.063	0.216	0.627	1.394	5	0.018
34	0.31	0.57	2.122	5.504	9	0.169
36	0.392	0.498	1.668	2.781	8	0.309
37	0.033	0.018	0.372	1.094	8	0.061
38	0.178	0.513	0.374	7.364	8	0.062
41	0.191	0.12	0.374	0.14	7	0.304

Table: E.7.74

Regional Dispersal(CV)of Industries'employment in response toTFP by Solow
(at current prices) 1986-95 Specification:CVemp=a+b(TFP-S)

Industry	$\hat{\beta}$	R^2	t	F	df	$(b/r)^2$
21	1.837	0.525	1.923	3.697	6	6.428
22	0.072	0.024	0.442	4.196	9	0.216
25	0.677	0.284	1.407	1.978	6	1.614
26	0.752	0.164	0.693	0.865	6	3.448
27	0.779	0.255	1.132	1.78	8	2.380
28	0.097	0.123	0.283	0.288	7	0.076
29	1.242	0.348	0.636	0.504	9	4.433
30	0.41	0.129	1.086	1.18	9	1.303
31	0.033	0.046	0.627	0.393	9	0.024
32	1.838	0.934	1.38	7.23	6	3.617
33	0.954	0.226	0.659	0.734	5	4.027
34	1.294	0.494	1.949	3.798	9	3.390
36	2.632	0.512	1.79	3.175	8	13.530
37	0.372	0.222	0.377	0.516	7	0.623
38	0.05312	0.537	3.044	9.263	9	0.005
41	0.442	0.091	0.837	1.701	7	2.147

Table: E.7.75

Regional Dispersal(HH) of Industries' employment in Response to Labor Productivity (at current prices) 1986-95 Specification: HH emp = a+b (L-productivity)

Ind	$\hat{\beta}$	R^2	t	F	df	$(b/r)^2$
21	0.019	0.143	0.816	0.666	5	0.003
22	0.021	0.134	0.786	0.617	5	0.003
25	0.081	0.022	0.08	2.877	6	0.298
26	0.0147	0.841	5.907	37.897	9	0.003
27	0.09	0.275	0.611	0.373	8	0.029
28	0.001	0.242	1.379	1.902	7	0.001
29	0.017	0.613	3.563	12.696	9	0.005
30	0.026	0.271	1.053	1.113	7	0.002
31	0.013	0.383	1.365	1.863	5	0.004
32	0.0156	0.291	0.847	0.717	8	0.001
33	0.805	0.696	0.569	43.148	6	0.931
34	0.061	0.006	0.323	3.157	7	0.620
36	0.003	0.581	3.3117	9.716	7	0.002
37	0.402	0.138	0.806	0.509	6	1.171
38	0.028	0.396	1.396	1.948	9	0.002
41	0.062	0.033	0.487	0.237	8	0.116

Table: E.7.76

Regional dispersal(HH) of Industries'employment in response to Capital productivity (at current prices) 1986-95 Specification: HHemp=a+b(K-productivity)

Industry	$\hat{\beta}$	R^2	t	F	df	$(b/r)^2$
21	0.032	0.143	0.572	0.473	6	0.007
22	0.024	0.044	0.337	0.133	5	0.013
25	0.057	0.101	0.311	0.512	7	0.032
26	0.075	0.601	2.314	5.356	9	0.009
27	0.022	0.221	0.218	1.117	7	0.002
28	0.047	0.32	0.995	1.991	8	0.007
29	0.731	0.343	1.153	1.33	9	1.558
30	0.349	0.592	2.27	5.133	9	0.206
31	0.076	0.102	0.675	0.456	5	0.057
32	0.059	0.026	0.464	0.216	9	0.134
33	0.09	0.162	1.244	1.549	9	0.050
34	0.07	0.019	0.497	1.358	8	0.258
36	0.494	0.55	3.318	11.011	8	0.444
37	0.184	0.394	1.686	6.022	6	0.086
38	0.653	0.221	0.369	1.173	6	1.929
41	0.53	0.663	2.306	5.318	8	0.424

Table: E.7.77

Regional Dispersal(HHof Industries' employment inresponsetoCapitalIntensity
(at current prices) 1986-95 Specification: HHemp=a+b(K/L)

Industry	$\hat{\beta}$	R^2	t	F	df	$(b/r)^2$
21	1.72	0.596	1.812	3.284	7	4.964
22	0.045	0.211	0.307	0.394	8	0.010
25	0.027	0.615	3.57	12.78	8	0.001
26	0.014	0.8	5.657	32.006	9	0.002
27	0.02	0.222	0.219	1.31	7	0.002
28	0.014	0.295	0.586	2.515	7	0.001
29	0.011	0.498	1.811	3.399	9	0.002
30	0.058	0.292	1.818	3.3	9	0.012
31	0.051	0.651	3.862	14.9	9	0.004
32	0.023	0.375	1.47	1.482	8	0.014
33	0.041	0.898	0.108	36.209	7	0.019
34	0.047	0.117	0.341	1.058	7	0.019
36	0.033	0.546	3.023	9.14	8	0.002
37	0.015	0.012	0.309	0.096	7	0.019
38	0.034	0.474	1.624	2.638	7	0.002
41	0.135	0.009	0.765	0.585	8	2.025

Table: E.7.78

Regional Dispersal(CV)of Industries' employment in response to Labor Productivity (at current prices) 1986-95 Specification CVemp=a+b(L-productivity)

Industry	$\hat{\beta}$	R^2	t	F	df	$(b/r)^2$
21	0.012	0.599	3.455	11.94	9	0.002
22	0.304	0.104	0.282	0.133	7	0.889
25	0.017	0.101	0.141	2.703	6	0.003
26	0.393	0.863	5.93	25.127	5	0.179
27	0.1948	0.228	0.482	0.232	9	0.166
28	0.072	0.679	0.477	0.685	7	0.008
29	0.0722	0.349	1.627	2.646	9	0.015
30	0.012	0.217	0.437	1.556	7	0.001
31	0.015	0.356	1.289	5.73	5	0.001
32	0.023	0.401	0.886	0.786	8	0.001
33	0.067	0.883	6.139	37.691	6	0.005
34	0.005	0.113	0.346	0.029	8	0.002
36	0.016	0.147	0.586	0.443	7	0.002
37	0.018	0.194	1.094	1.202	5	0.002
38	0.017	0.303	1.318	1.738	5	0.001
41	0.172	0.847	0.646	4.175	9	0.035

Table: E.7.79

Regional Dispersal (CV)of Industries' employment in response to Capital Productivity (at current prices) 1986-95 Specification CV emp=a+b(K-productivity)

Industry	$\hat{\beta}$	R^2	t-value	F-test	df	$(b/r)^2$
21	0.024	0.513	0.635	0.513	9	0.001
22	0.649	0.911	0.122	0.101	6	0.462
25	0.125	0.555	1.194	1.038	7	0.028
26	0.559	0.474	1.124	1.256	5	0.659
27	0.021	0.222	0.229	1.011	7	0.002
28	0.563	0.392	0.898	1.806	8	0.809
29	0.802	0.473	2.182	4.761	9	1.360
30	0.033	0.557	2.107	4.439	9	0.002
31	0.012	0.279	0.88	16.638	6	0.001
32	0.076	0.038	0.562	0.316	9	0.152
33	0.074	0.248	1.08	1.165	9	0.022
34	0.086	0.119	0.492	1.159	8	0.062
36	0.39	0.175	0.752	0.666	9	0.869
37	4.033	0.656	2.647	7.008	6	24.794
38	0.017	0.145	0.344	1.14	6	0.002
41	0.775	0.446	1.434	3.226	5	1.347

Table: E.7.80

Regional Dispersal (CV) of Industries'employment in responseto Capital intensity (at current prices) 1986-95 Specification: CVemp=a+b(K/L)

Industry	$\hat{\beta}$	R2	t	F	df	$(b/r)^2$
21	0.747	0.268	1.272	1.619	9	2.082
22	2.22	0.396	1.812	3.284	7	12.445
25	2.038	0.159	0.616	0.579	7	26.122
26	0.384	0.868	5.18	26.192	5	0.170
27	0.069	0.221	0.255	1.003	7	0.022
28	0.012	0.244	1.393	1.94	7	0.001
29	0.6251	0.334	0.529	0.58	8	1.170
30	0.055	0.279	1.758	3.091	9	0.011
31	0.331	0.594	2.135	4.557	8	0.184
32	0.327	0.383	1.252	1.561	8	0.279
33	0.052	0.101	4.492	20.179	6	0.027
34	0.842	0.154	0.284	1.134	8	4.604
36	0.011	0.323	0.533	1.187	8	0.000
37	0.039	0.686	2.561	6.538	7	0.002
38	0.019	0.344	1.449	2.1	5	0.001
41	0.046	0.15	0.84	0.706	5	0.014

BIBILIOGRAPHY

BOOKS:

Ahluwalia I.J.- Industrial Growth in India- Stagnation since the Mid-Sixties- ***Oxford University Press*** -Delhi-1985.

Ahluwalia Isher Judge- Productivity and Growth in Indian Manufacturing- ***Oxford University Press***, Delhi-1991.

Allen, Michael Patrick- ***Understanding Regression Analysis***-Plenum Press, New York-1997.

Balance Robert and Sinclair Stuart - ***Collapse and Survival: Industry Strategy in a Changing World***; 1983-George Allen and Unwin- UK. Ch-1, pp-12.

Brahmananda P.R.- '***Productivity of the Indian Economy- Rising Inputs or Falling Outputs***' (1982).

Burns Tibor - 'On Measuring Capital' in the Theory of Capital, ed. By Lutz FA and Hague, pp-85, London, ***Macmillan*** 1961.

Chizmar J K -1972-'An Econometric Examination of Organizational Change in Production Functions of Major Industries- The Indian Case' Boston College, ***Ph.D. Thesis*****.**

Christensen L. R., Cummings, D. and Jorgenson D.W. - 'Economic Growth 1947-73: An International Comparison' in Kendrick J.W and Vaccara B.(ed) '***New Developments in Productivity Measurements***', ***Studies in Income and Wealth-Vol-41***-Chicago, University of Chicago Press, 1980.

Christopher Freeman and Luc Soete- "Factor Substitution and Technical Change"- Technical Change and Full Employment-1987 Edited -***Basil Blackwell***, Oxford OX4, UK, pp-40-41.

Goldar in his 'Productivity Growth in Indian Industry' (1986).

Gupta S.C. and V.K. Kapoor- ***Fundamentals of Applied Statistics***- Sultan Chand and Sons-New Delhi-110002-1995-Chapters 2 and 3.

Hanson A H- The process of Planning- ***A study of Indian Five Year Plans***- 1956-64

Jones H.G.- ***An Introduction to Modern Theories of Economic Growth***, Ch7 and 8- Tata McGraw Hill-pp-133-

Kaur Kulwinder in "***Structure of Industries in India: Pattern, Framework, Disparities***" also writes that that level of per capita income has been found to be correlated with degree of industrialization- **Deep and Deep Publications**, 1983- Ch-1, pp-18.

Kendrick J.W.-Productivity in the USA- ***NBER***, Princeton.

K L Krishna's article**- '**Industrial Growth and Productivity in India' in Professor Brahmananda's book ***'The Development Process of the Indian Economy'*****-**1987.

Krishna K. L. (1992) booklet **"What do we learn from productivity studies?" in his** *Presidential Address to the Tenth Annual Conference to AP Economic Association in Andhra University***,** Waltair, 8-9 February, 1992.

Kulwinder Kaur- Structure of Industries in India- Pattern- Framework- Disparities - **Deep and Deep Publications**, 1983- Ch-1, pp-18.

Kuznets, S. -***Six Lectures on Economic Growth***-Free Press of Glenocoe, Inc, 1959, pp-122.

Kuznets, S. -***Modern Economic Growth-Rate, Structure and Spread***, New Haven**: Yale University Press**, 1966, pp-127.

Mehta, S. S. - Productivity, Production Function and Technical change- A Survey of Some Indian Industries-***Concept Publishing House***, New Delhi-1980-pp-10-20.

Jorgenson D.W.-'Econometric Methods for Modelling Producer's Behavior' in Griliches, Z and Intriligator, M.D. (ed.)- ***Handbook of Econometrics***, ***Vol. III***-Amsterdam, North Holland. 1986.

Oulton Nicholas and O' Mahony, Mary- Productivity and Growth- A Study of British Industry-1954-86- ***National Institute of Economic and Social Research***-1994.

Panchamukhi V.R- A Survey of Economic Studies in the fields of Production, International Trade, Money and Banking' in ***ICSSR***, A Survey of Research in Economics, Vol VII, *Econometrics*, Allied Pub. New Delhi.

Rao C. Radhakrishna- ***Linear Statistical Inference and Its Applications***- - Wiley Eastern Private Limited, New Delhi-1974- p-263-290

Rao C.R.- ***Essays on Econometrics and Planning***- edited-Oxford, Pergamon Press.

Smith A.D., Hitchens D.M.W.N. and Davies S.W- **International Industrial Productivity: A Comparison of Britain, America and Germany**, Cambridge, **Cambridge University Press**-1982.

Somayajulu, V V N. – Industrial Development of Andhra Pradesh-1956-82-University of Hyderabad-***ICSSR Report***-1987.

Spiegel R. Murray- ***Schaum's Outline of Theory and Problems of Statistics***- 2nd edition in S.I. units- McGraw Hill Book Company-1992 Metric edition.

Surekha- Strategies of Industrialization: Small Scale and Large Scale Industrial Development in Andhra Pradesh- An Econometric Analysis-University of Hyderabad-***Unpublished M.Phil dissertation***-1993.

Wallis Kenneth- ***Topics in Applied Econometrics***-Second Edition- Basil Blackwell-Oxford-1979-Chapter-2.

Wolff E.N. and Dollar D- Capital Intensity and TFP Convergence in Manufacturing-1963-1985 in Baumol WJ, Nelson W.W. and Wolff E.N ed- ***Convergence to Productivity-Cross National Studies and Historical Evidence*-New York, Oxford University Press, 1994.**

Mahajan O.P – ***Regional Economic Development in India****-1950-66*, Ph. D. Dissertation Kurukhetra University, 1972.

Mehta S.S. - ***'Productivity, Production Function and Technical Change*- A Survey of Some Indian Industries'-**1974.

Leontief - - Estimates of capital stock of American Industries, 1947, Cambridge, mass. 1953. ***Harvard Economic Research Project*** -pp-21-22

Panchamukhi V.R- A Survey of Economic Studies in the fields of Production, International Trade, Money and Banking' in ***ICSSR***, A Survey of Research in Economics, Vol VII, ***Econometrics***, Allied Pub. New Delhi.

Pathak C. R., "Regional Disparities in Industrial Development in India" Chapter-6, pp-113-124; in the book ***"Economic Liberalization and Regional Disparities in India-Special Focus on the North-Eastern region"*** edited by A. C. Mohapatro and C.R. Pathak, Star Publishing House, Shillong, 2003.

Sandeep Kumar's published Ph.D. work on 'Regional Disparities in Industrial Development' (*Pub-**Classical Publishing Company***), New Delhi-15, 1999.

Sims C. A -'The Dynamics of Productivity Change- A Theoretical and Empirical Study' (**Unpublished dissertation, Harvard Univ**, Aug 1967),

Somayajulu V V N.- ***Industrial Development of Andhra Pradesh-1956-84***- 1994- ICSSR Study- University of Hyderabad.

Surender V. -'***Indian Industries'***- B. R Publishing Corporation in Ch-5- 1986.

Vijay Seth-'Industrialization in India- A spatial Perspective'- ***Commonwealth Publications***, New Delhi-2-1987.

JOURNALS:

Abramovitz Moses: Welfare Quandaries and Productivity Concerns- Presidential Address delivered at the Ninety-third meeting of American Economic Association, September 6, 1980, Denver, Colorado-***American Economic Review***-March 1981, Vol.71, No.1-pp: 1-17.

Agarwal A. L**-** 'On estimation of Cobb Douglas Production Function in Selected Indian Industries' *in* ***Artha Vijnana,*** June 1986, V-28, N-2, 152-170.

Anuradha and AVVSK Rao- 'An Analysis of Interstate Industrial Disparities in India 1970-71-1985-86'-***Indian Journal of Regional Science***, Vol.-27, 1995.

Arrow K.J, H. B. Chenery, B. S. Minhas and R. M. Solow- Capital-Labor Substitution and Economic Substitution- ***The Review of Economics and Statistics***- Vol. XLIII, No.3- August 1961-page-225-249.

Awasthi Dinesh - 'Trends in regional Dispersal Inequalities in India 1961-1978'- ***Anvesak***-Vol-19, Nos:1 and 2.

Balakrishnan and Pushpangadan-'TFP Growth in Manufacturing Industry- A Fresh Look**-** ***Economic and Political Weekly (EPW)***, March-1994.

Banerjee A -'Productivity, Growth and Factor Substitution in Indian Manufacturing' ***Indian Economic Review,*** 1971.

Basu Susanta in ***Quaterly Journal of Economics (QJE)***, Vol-111, pp-639-1268, 1996(Pro Cyclical Productivity: Increasing Returns or cyclical utilization?)

Blakemore Arthur E. and Schlagenhauf Don E- Estimation of Trend Rate of Growth of Productivity- ***Applied Economics***- 1983- 15- 807-814.

Burns, Arthur Robert-The Process of Industrial Concentration-Summary- ***Quaterly Journal of Economics*** (***QJE)***- Vol-XLVII-1932-33-Vol-47.

Chatterjee, Anil Kumar- Productivity in Selected Manufacturing, ***Economic and Political Weekly (EPW)***, Nov 24, 1973;

Chenery, H.B.- Patterns of Industrial Growth-***American Economic Review***, 50, September 1960-p-624-654.

Chowdhury M.D.- ***Behavior of Spatial Income Inequality in a Developing Economy: India, 1950-70"*** Paper presented at the 9th Conference of the Indian Association for Research in National Income and Wealth-January 1974.

Christensen L R. Jorgenson D.W. and Lau L.J.- Transcendental Logarithmic Production Frontiers, ***Review of Economics and Statistics***, Vol-55, 1973- pp-28-46.

Dadi M. M. -***Indian Economic Journal***; 1973, Vol-28; Oct-Dec 1980 ; Vol-2,pp-28.

Dadi and Hashim- An adjusted capital Series desired for Indian Manufacturing 1946-64 ***Anvesak***, December-1971. (Dadi M. M. and Hashim S. R. - ***Capital-Output Relations in Indian Manufacturing,*** Dept of Economics, Faculty of Arts, M. S. University of Baroda-Baroda).

Datta, S and Mukhopadhyaya, F. (1999)- in 'Industrial Disparity in India: A test of Convergence' in ***Indian journal of Regional Science*** (***IJRS)***, Vol-31, No-1, 1999-p-19-30.

Dhar P. N. and D.U Sastry, "Inter-State Variations in Industry, 1951-61, ***Economic and Political Weekly,*** 4, March-1969, pp-535-538.

Denison E- why Growth Rates Differ- ***The Brookings Institution-Washington DC***-1967.

Desai Padma-'Growth and Structural Change in Indian Manufacturing Sector: 1951-1963 in ***Indian Economic Journal*** (IEJ)-Vol.-XVII, No-2, Oct- Dec-1969.

Desai Rohit-Changing Pattern of Regional Industrial Diversification- A comparison over time –***-Indian Journal of Regional science*** **(*IJRS)*-**Vol.-18, N-1, 1986.

Dhananjaya R.S., Sasikala Devi N and Madhavan M- Patterns of growth and structural change: A Study of Indian Factory Sector Industries in 1973-74 to 1989-90***, Economic Growth and Change***, Vol.VI, Sept-Oct-1996.

Domar Evsey-On total productivity and All That- ***Journal of Political Economy***, -1962-1970-December.

DN- Low Employment Growth-***Economic and Political Weekly (EPW)***-May 25-2004, p-2192-4.

Dougherty C. and Jorgenson D.W.- International Comparison of Sources of Growth, ***American Economic Review (AER***)**-**Vol.86-May 1996- pp-25-29.

Dutta M. M - 'Production Function for Indian Manufacturing'**- *Sankhya* -**1955.

Dutta Majumdar-'Productivity of Labor and Capital in Indian Manufacturing 1951-61'-***Arthaniti*** (1966).

Findlay Ronald - Modeling Global Interdependence: Centers, Peripheries and Frontiers' ***American Economic Review (AER)***-86, -1996 No-2, pp-47-51.

Hasan Rana (2002)- 'The impact of imported and domestic technologies on the productivity of firms: panel data evidence from Indian manufacturing firms'**- *Journal of Development Economics***- 69-2002-pp. 23-49.

Hiau Looi Kee-Policy Research Working Paper 2702- ‘Productivity versus Endowments- A Study of Singapore’s Sectoral Growth-1974-92’ - ***World Bank Development Research Group Trade- Nov-2001***.

Hollis B. Chenery and Lance Taylor in “Development Patterns: Among Countries and Over Time”- ***The Review of Economics and Statistics***- Vol-L, No-4- 1968, p-391-416:

Lakhwinder Singh and K C Singhal -‘Economies of Scale and Technical Change’ in ***Productivity***- 1986 XXVII, 1, 55-60.

Lucas-‘On the Mechanics of Economic Development’- ***Journal of Monetary Economics***, **Vol.-22**- 1988, pp-3-42.

Gordon R. J.-1969-$45 Billion of US Private Investment has been Mislaid- ***American Economic Review (AER)***- June 1969, 59 (3), pp.221-38

Grossack Irvin- The concept and measure of permanent industrial concentration- ***Journal of Political Economy***, Vol-60-(4)- 1972 page-745-760.

Hall and Jones **–**Levels of Economic Activity Across Countries- ***American Economic Review (AER)***- Vol.87-1996-7-pp: 173-4.

Hicks John - The Assumption of Constant Returns to Scale- ***Cambridge Journal of Economics***, 1989 March, No-1- Vol.-13, p: 9-17.

Ishaq Nadiri M- ‘Some approaches to the Theory and Measurement of TFP’- A Survey- ***Journal of Economic Literature***, Vol.-VIII-***American Economic Association***, Pennyslyvania-1970-p-1137-1177.

Islam Nazrul- ‘International Comparisons of TFP- A Review’-***Review of Income and Wealth*,** Series 45, December1999-N-4.

Jaume Ventura- Growth and Interdependence- ***The Quarterly Journal of Economics* (*QJE)*- Vol.-112, No-1, 1997, pp-57-84.**

Jayadevan C M -of National Labor Institute, Noida ***–Indian Journal of Regional Science* (*IJRS)***-p-41-56, Vol.-XXVII, Number-1&2-1995.

Jeemol Unni, N Lalitha and Uma Rani in a Special Article -‘Economic Reforms and Productivity Trends in Indian Manufacturing’, ***Economic and Political Weekly***, Oct-13, 2001.

Jeffrey William- “Regional Inequality and the Process of National Development”, ***Economic Development of Cultural Change***, Vol. XIII, No.4, Part-II, pp-3-84, Julu-1965.

J. Mohan Rao- in ‘Manufacturing Productivity Growth- Method and Measurement. ***Economic and Political Weekly (EPW)***, Vol.-XXXI- No-44, Nov-2, 1996.

Kaplinsky, R-'India's Industrial Development: An Interpretative Survey' ***World Development***, Vol-25, No-5, 1997, pp-681-694.

Kelkar V. L. and Kumar R- Industrial growth in 1980s- Emerging policy issues**- *Economic and Political Weekly* (*EPW)*** January 27 pp-209-222-1974.

Krishna Kumar P. (2000) (Ch-16-pp-264-271 titled 'Returns to Scale and Technical Progress in Indian Manufacturing' in book by ***VVN Somayajulu's "Econometric Studies of Economic Reforms in India"*** published by Academic Foundation-2000.

Kuznets S- "Quantitative Aspects of the Economic Growth of Nations- Vol.-II- Industrial distribution of National Product and Labor Force***"-Economic Development and Cultural Change***- July 1957- Supplement to Vol 5, No-4.pp-17, pp-391.

K. Rana in '***Industrialization of Hill States in India'*** Deep and Deep Pub. in Chapter-VIII--(1988).

Krishna Raj and Mehta S. S. **-** Productivity Trends In Large Scale Industries, ***Economic and Political Weekly (EPW***), Oct 26, 1968.

Lahiri R.K- "Some aspects of Interstate Disparity in Industrialization in India", ***Sankhya,*** 31, Series B, Dec. 1969.

Mahadevan Renuka-'Trade Liberalization and Productivity growth in Australian Manufacturing Industries'-***Australian Economic Journal***- Vol-30, No-2 June-2002-pp.170-18.

Majumdar Sumit - 'Fall and Rise of Productivity in Indian Industry- Has Economic Liberalization Had an Impact?' in ***Economic and Political Weekly (EPW)***-1988-89 (p-M-46-M-53).

Mathur Ashok**,** "Regional Development and Income Disparities n India: A Sectoral Analysis-***Economic Development and Cultural Change,*** Vol-31 No.3 April 1983, pp-475-505.

Mehta S. S and Krishna Raj - Productivity Trends In Large Scale Industries, ***Economic and Political Weekly (EPW)***, Oct 26, 1968.

Mohan Rao- for 1973-93 - ***Economic and Political Weekly*** **(*EPW)*-**Nov-2 1996.

Moses L and Williamson H.W. –***American Economic Review (AER)***, Vol. LVI 1967, pp-211-22 ' Location of Economic Activities in Cities'.

Murti V.N. and Sastry V.K- Production Functions for Indian Industry-***Econometrica***- Vol.-25-Number 2- April 1957-p-205-221.

Nadiri Ishaq M- Some Approaches to the Measurement of TFP-A Survey- ***Journal of Economic Literature-***1970.

Nagaraj R (1994) 'Employment and Wages in Manufacturing Industries- Trends, Hypothesis and Evidence' in Special Article **in *Economic and Political Weekly* (*EPW)*-** Jan 22- 1994, p-177-186.

Nair, K. R. G., " A Note on Inter-State Income Differentials in India-1950-51 to 1960-61", ***Journal of Development Studies***, 7 July 1973, pp-441-447.

Nath V- 'Regional Development Policies', ***Economic and Political Weekly (EPW)***- Special Number July 1971,pp-1601-1608.

Pandit M. L.- 'Industrial Income in the States-1960-69' ***-Indian Journal of Regional Science***, Vol-VI-No-2-1974-p-124-136. "***Spatial Variations in Rates of Industrial Development in India" for M. Phil degree*** at Center for Studies in Regional Development, Jawaharlal Nehru University.

Paul Krugman- 'The Myth of Asian Miracle'- ***Foreign Affairs***, Vol.-73, No-6, 1994, pp-62-78.

Power Laura (1998) in 'Missing Link: Technology, Investment and Productivity' in ***Review of Economics and Statistics***, Vol-80, 1998- p-1300-312.

Pravin Krishna and Devashish Mitra (1998)'Trade Liberalization, market discipline and Productivity Growth: New Evidence from India' in ***Journal of Development Economics***, Vol-56, pp: 447-462.

Quandt's (1960)-Tests of hypothesis that a linear regression obeys two separate regimes, ***Journal of American Statistical Association***, 55, 324- 30.

Rao Hemlata, "Identification of Backward regions and the Study of Trends in Regional Disparities in India", Paper presented at the Regional Imbalances Seminar, ***Indian Institute of Public Administration (IIPA)***, New Delhi, 1972.

Romer P. –'Increasing returns and long run growth'- ***Journal of Political Economy***, Vol.94, 1986- pp.1002-37.

Sandesara J.C. -Industrial Growth in Indian Economy (1982) in ***Indian Economic Journal*** Oct-Dec-1982.

Sengupta D. N.-'Indian Manufacturing Industry- Growth Episode of the Eighties' in ***Economic and Political Weekly (EPW)***, May 29, 1999, pp-M-54-M62.

Schamensas Richard- Using H Index of Concentration with published data: ***Review of Economics and Statistics***, Vol LIX- 1977-pp-186-193.

Singh R. R - Productivity Trends and Wages-***Eastern Economist***, April 29, 1966.

Somayajulu VVN-Structural Changes and Growth in Indian Industries –1946-1970**, *Asian Economic Review***, December-1974, Vol-17, No-1, 2,3.

Somayajulu V.V.N.- Measurement of Structural Changes in Small versus Large Industries, 1965-1975, ***Economic and Political Weekly (EPW)***, 1976.

Somayajulu V.V.N. –Industrial Development in India 1878-1978- A Resume' ***Productivity***, Vol.XXI, No-1, April-June 1980, p-9-66. - p: 39-66.

Somayajulu VVN and George Jacob in 'Production Function Studies of Indian Industries: A Survey' in ***Artha Vijnana***, V-25, N-4, Dec 1983, pp-402-418.

Somayajulu V.V.N.-Industrial Stagnation and growth in Indian Industries of Andhra Pradesh, 1956-1985-Re-Examining Mid Sixties Explanations for India's Industrial retrogression, ***ARTHA VIJNANA***, Vol-13, pp-127-140.

Solow R. M.- Technical Change and Aggregate Production Function-***Review of Economics and Statistics***- Vol-39- 1957- pp.312-20.

Sunil Kumar-'Inter-state Variations in Productivity in Indian Manufacturing Sector: A Translog Approach'-***Indian Journal of Regional Science (IJRS),*** Vol.-XXXI, No-2, 1999-pp-82-94.

Uday Sekhar -Trends in Interstate disparities in Industrial development in India 1961-1975-***Indian Economic Journal***- Oct-Dec-1982 Vol30 No-2.

Upender M-'Elasticity of L-productivity in Indian Manufacturing' in ***Economic and Political Weekly (EPW)***, 25 May 1996.

Venkataramiah P-"***Inter-State Variations in Industry, 1951-1961: A comment"- Economic and Political Weekly,*** 4- August, 1969, pp-1280-1.

Vijay Bhasin and Vijay Seth (1980)'Estimation of Production Functions for Indian manufacturing Industries'-Jan 1980, ***Indian Journal of Industrial Relations*, No-3, Vol.15.**

Wolff Edward-'Capital Formation and Productivity Convergence Over the Long Term' in ***American Economic Review* (*AER*)**-Vol-81, June-Dec-1991, p-565-579.

Yeong Yeh –'Economies of Scale for Indian Manufacturing Industries'-***The Econometric Annual of Indian Economic Journal***-1966.

Young Alwyn - ‘A tale of Two Cities: Factor Accumulation and Technical Change in Hong Kong and Singapore**’** ***NBER Macroeconomics Annual***-1992-pp-13-53.

Young A.- ‘The Tyranny of Numbers- Confronting the statistical Realities of East Asian Growth Experience’-***Quaterly Journal of Economics***-Vol.-110, no-3, 1995, p-641-668.

A Database on Industrial Sector in India-***Economic and Political Weekly Research Foundation***-2002.

GOVERNMENT REPORTS:

Annual Survey of Industries- ***Reports of the Results of the Factory Sector*** 1959-71-1973-98 Published by the ***Central Statistical Organization*** (CSO), Government of India (GOI), Kolkata.

CMI- GoI, Directorate of Indian Statistics, CMI, 1946-58, Manager of publications.

Report of Working Group on Identification of Backward Area- ***GOI***, New Delhi-1969.

Annual Survey of Industries Classification (ASIC) 1959 (onwards), as followed in ASI (Census Part) and NSS (Sample Part of ASI) Reports, Published by Central Statistical Organization (CSO), NSS Organization (NSSO), Government of India, New Delhi.

Statistical Abstracts.