A. BOOKS


Uma Kapila, Understanding the Problems of Indian Economy, Academic Foundation, New Delhi, 2005.
B. PERIODICALS


Dholikia H. R. , "Regional Aspects of Industrialisation ." Economic and Political Weekly (November 18, 1989).


Subramanian M.S., Productivity Growth in Cotton Textile Industry in Tamil Nadu, Indian Journal of Industrial Relations, (1992), Vol. 27 Issue 4, P 383,


C. REPORTS


GOTN, Industrial Policy 2007, Industries Department.


D. WORKING PAPERS


http://www.mse.ac.in/pub/wp_shanmugam.pdf


E. UNPULISHED THESIS


Suresh Babu M., Competition, Barriers to Entry and Productivity Growth in Indian Manufacturing, Ph. D Thesis submitted to Jawaharlal Nehru University.: Centre for Development Studies, Trivandrum 2002.


F. WEBSITES


<http://www.education.nic.in/cd50years/15/8P/82/8P820V01.htm>.
<http://www.mospi.gov.in>.
<http://www.officeof economic adviser>.
<http://www.rbihandbookofstatistics>.
<http://dspace.vidyaniti.org.in;8080/dspace/industrial growth/>.
<http://ideas.repec.org/>.
<http://wileyinterscience>.
<http://springelinks>.
<http://sageonline>.
<http://ouponline>.
<http://oxfordonline>.
Regional disparities or imbalance refers to a situation where per capital income, standard of living, consumption situation, industrial and agriculture and infrastructure development are not uniform in different parts of a given region. Regional disparities are a global phenomenon. The problem of regional disparities in the level of economic development is universal.


Manufacturing comprises of mechanical, physical or chemical transformation of materials, substances or components into new products.


www.ideas.repec.org/p/ind/cdswpp/310.html


Sebastian and M.S. Leonard, “Regional Planning and Industrial Development”, A study of Tamilnadu in Munirathana Naidu (ed) Industrialisation and Regional Development in India, Reliance Publishing House, New Delhi, 1988


The reason for taking value added in lieu of output is that value-added is considered a more comprehensive indicator of industrial growth. For it represents net cost of the output and is relatively free from the input biases across industries.

Two important methodologies used in most studies on productivity growth have been growth accounting and the econometric estimation of production functions. The objective of the growth accounting technique is to determine how much output growth is due to accumulation of inputs and how much can be attributed to technical progress. (Deb Kusum Das 2004)

The box-percentile plot, introduced by Esty and Banfield, differs from other density boxplots in that it does not use kernel density estimation to plot the density curve. In the box-percentile plot the observed values $y_i$ are ordered from lowest-highest, and then each $y$-value is plotted at a distinct point. Let $w$ be the desired maximum width of the box. If $y_k$ less than or equal to the median then it is plotted at height $y_k$ and distance $kw=(n + 1)$. If $y_k$ greater than the median then it is plotted at height $(n + 1 - k)w=(n + 1)$. The box-percentile plot does not over or under smooth the density curve, since each $y$-value is plotted at a distinct point. [http://had.co.nz/stat645/project-03/boxplots.pdf](http://had.co.nz/stat645/project-03/boxplots.pdf)

Regarding the measurement of labour input, there are three alternatives available: ‘man-hours’, ‘workers’ and ‘employees’.

Taking ‘total employees’ as the measure of labour input involves the assumption that ‘workers’ and ‘persons other than workers’ are perfectly substitutable. This is a serious limitation of the measure of labour input.

Use of gross value added at constant prices to represent output is a common practice in the Indian empirical literature (Goldar, 1986; Ahluwalia, 1991; Balakrishnan and Pushpangadan, 1994; Balakrishnan and Pushpangadan, 1998). Griliches and Ringstad (1971) advance the following arguments in its favour.
(a) It facilitates comparison of results for different industries with different material intensities. It improves comparability of data for individual establishments even within the same industry as long as they differ with regard to the degree of vertical integration. (b) It facilitates aggregation of output across industries. (c) Inclusion of ‘material’ as an argument in the production function leads to the problem of dominant variable. In such a formulation almost all variation in output tends to get explained by ‘material’, thereby obscuring relations of greater interest. (Goldar 1985).

xci To convert nominal value added to real value added, WPI series of each sector is used. However, there are three WPI series each of which has a different base year; the first WPI series covers the period 1970-82 and the base year is 1970-71; the second WPI series covers the period 1982-93 and the base year is 1981-82, and the final one covers the period 1993-97 and the base year is 1993-94. These three series have been spliced to obtain the overall WPI series at 1993-94 prices.


xciii ASI covers only a part of the manufacturing sector that is registered sector while it does not cover the unregistered sector. For the unregistered sector the State Governments conduct their own survey through their respective statistical organisations. The Registered Sector is that sector which comes under the provisions of Indian Factories Act, 1948.

xciv The period of analysis is chosen in such a way that it captures growth trends of the manufacturing industry operating under the policy framework of liberalization and globalization introduced since 1991. The study period also enables tracing of the trend in industrial growth under the earlier policy of regulations for comparative purpose. Besides, the period is long enough to indicate the secular trend to provide a perspective for assessing potential growth. Keeping all these considerations along with the data availability in view, the period of study is from 1973-74 to 2007-08 a 35 year period.

xcv The composition of industry groups considered is based on the study Unel, Bulent (2003), ‘Productivity Trends in India’s Manufacturing Sectors in the last Two Decades’, IMF Working Paper no. WP/03/22.

xcvi British records show that the term district was to denote an administrative unit either big or small. When the British consolidated their possessions in the Carnatic and demarcated it into viable administrative divisions, the “districts” came into being. The districts were mostly named after the towns where the headquarters were located. With a view to making the district administration more effective, the Government of Tamil Nadu reorganised some of the larger districts and carved new districts out of them in stages.

xcvii The names of districts in Tamil Nadu that are renamed is given as below:

<table>
<thead>
<tr>
<th>List of Districts Renamed</th>
</tr>
</thead>
</table>
- Kamarajar became Virudhunagar;
- Madras became Chennai;
- Pasumpon Muthuramalinga Thevar became Sivaganga;
- Periyar became Erode;
- Tirunelveli-Kattabomman became Tirunelveli
- Tiruvannamalai-Sambuvarayar became Tiruvannamalai;
- Tiruppur District split from Coimbatore districts from Dec 2007
- Chidambaranar became Tuticorin, later Thoothukudi;
- North Arcot Ambedkar became Vellore


c As per the Micro, Small and Medium Enterprises Development (MSMED) Act, 2006 the enterprises are classified into manufacturing and service enterprises based on their investment in plant and machinery / equipment (excluding land and building) as indicated below:- Manufacturing Enterprises: Micro Manufacturing Enterprises Up to Rs.25 lakhs, Small Manufacturing Enterprises Above Rs.25 lakhs & upto Rs.5 Crores and Medium Manufacturing Enterprises -- Above Rs.5 Crores & upto Rs.10 Crores. Service Enterprises: Micro Service Enterprises Up to Rs.10 lakhs, Small Service Enterprises Above Rs.10 lakhs and upto Rs.2 Crores and Medium Service Enterprises Above Rs.2 Crores and upto Rs.5 Crores.


civ Tamil Nadu: An Economic Appraisal, 2008-09, Department of Evaluation and Applied Economic Research (DEAR), Government of Tamil Nadu, Chennai
This classification it is necessary to emphasis, is not based on any basic principle of periodisation, suggestive of significant changes in industrial structure. It is primarily governed by the availability of data and convenience.


Raman Mahadevan (1987).

In 1906 Alfred Chatterton, ‘Director of Industrial and Technical Inquiries’ initiated the pioneering work in the technological up-gradation of several small-scale industries. Handloom Weaving, Aluminum Industry, Chrome Leather Tanning and Pencil Industry were selected for his experiments. He started two handloom factories. When a pencil factory was in an advanced stage of construction, and the plans for the utensil factory was made, an order by Lord Viscount Meri ey the then Secretary of state of India, and an upholder of the orthodox Laissez Faire Policy banned Chatterton from all ‘Pioneer Factories’ and the scheme had to be closed down (for further details see Padmini Swamininathan 1987 and 1991).


Raman Mahadevan (1987).


Raman Mahadevan (1987).


cxvii  T.N. Kapoor (1967).


cxxi  T.N. Kapoor (1967).

cxxii  Ibid.


cxxiv  T.N. Kapoor (1967).
The first cement plant came to be promoted as early as 1904, at Madras, by the South Indian Industries Limited. While the installed capacity of this plant was 10,000 tones per year the actual production was considerably lower. As a consequence of high cost of coal freight, and the competition from ACC plant, at shahbad in Hyderabad state, this industry proved to be commercially unviable.


Ibid.

K. Bharathan (1980).

T.N. Kapoor (1967).

Ibid.

en.wikipedia.org/wiki/Structural_change


www.itcedonline.com/introduction/glossary2_q-z.html


State Domestic Product is a measure in monetary terms of the volume of all goods and services produced by an economy during a given period of time accounted without duplication. The measure is in value terms as the different units of production and different measures of services are not directly additive. The estimates of SDP at current prices are obtained by evaluating the product at current prices prevailing during the year. The estimates of SDP at current prices, over the time do not reveal actual economic growth because these contain the combined effect of (i) the changes in volume of goods and services and (ii) the changes in the prices of goods and services. In order to eliminate the
effect of price changes/inflation, the estimates of SDP are also prepared by evaluating the goods and services at the prices prevailing in the fixed year known as base year and are known as the estimates of State Domestic Product at constant prices.

The estimates of State Domestic Product are prepared for all the sectors of economy both in terms of Gross and Net basis. The difference between the two is that in the gross estimates, no deduction is made for Consumption of Fixed Capital (CFC) which takes place in the process of production, whereas in the net estimates, CFC is subtracted from the gross value figures. Net State Domestic Product is also called State Income. Again, capital is one of the primary factors used in production and this results in the consumption of the fixed capital and hence, a reduction in the economic life of the capital. In other words, the capital depreciates as a result of its use in the process of production. The CFC measures the replacement value of that part of the capital stock, which has been used up in the production process during the year.

The SDP estimates are being prepared by Directorate of Economics & Statistics from the sixth decade of the last century. First series of estimates was compiled for the period 1960-61 to 1977-78 with base year 1960-61. Second series covers the period from 1970-71 to 1986-87 with base year 1970-71. The third series was w.e.f. 1980-81 to 1996-97 with base year 1980-81. Fourth revision took place in nineties with base year 1993-94 and continued up to 2004-05. For the present series the base year has been revised to 1999-2000. Now the initiative has been taken to shift the base year from 1999-00 to 2004-05 in the coming year.

Gradual improvement in the availability of basic data over the years compels the SDP series compilers to review the methodology with a view to update database and shift the base year to a more recent year. As a result, the base year of the present SDP series has been shifted to 1999-2000.

cxxxviii However, it is misleading to measure industrial growth in terms of increase in the number of registered factories as is done in official statistics. Sometimes, the number of registered factories increases because factories which already existed but which had earlier failed to get themselves registered under the Factoreis Act, get registered for one new reason or another. Particularly when a manufacturer is in need of financial assistance or of some raw material supplies, such registration becomes necessary. It may also happen that a factory which is registered under one name may be divided, at least on paper to assume more than one name in order to obtain some form of assistance as a small unit. Further, effective coverage of the Factories Act could also increase the number of registered factories. Lastly, an increase in the number of registered factories merely on government record does not mean that they all exist and/or that they are actively engaged in production. Instead of thinking in terms of the number of factories, it would be more useful to think in terms of the per factory fixed capital, employment, output, value added, and per worker capital and value added. (Mahesh Bhatt and V.K. Chavada “Industrial Growth in Gujarat: An Appraisal”, EPW, Vol. 5, No. 48 (Nov. 28, 1970), pp1929-1932).

cxxix The growth rates of selected variables of the registered manufacturing sector in Tamil Nadu during four sub-periods and the entire period are given below.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Factories</td>
<td>7.25</td>
<td>2.94</td>
<td>3.36</td>
<td>2.02</td>
<td>3.64</td>
</tr>
<tr>
<td>Employment</td>
<td>6.08</td>
<td>1.61</td>
<td>2.63</td>
<td>6.93</td>
<td>3</td>
</tr>
</tbody>
</table>
Abramovitz (1956) was the first to observe the growth of output occurring due to factors other than an increase in inputs. Solow (1957) measured total factor productivity (TFP) as a shift in the production function. Since then there has been an increasing number of studies on TFP. Productivity growth is a crucial factor in determining growth of an economy. The study of productivity becomes imperative in view of the limited availability of factors of production, particularly capital. Productivity is the marginal contribution of a factor to the output growth of a product. The proportion of factors of inputs is different in different industries. In labour-intensive industries, the emphasis is on the capital productivity. On the other hand, for capital-intensive industries, the concern is to increase labour productivity. If productivity is increasing in an economy it means that its factors of production and commodity inputs are manifesting an increase in their output efficiency. The productivity improvements along with the increase in the quantities of factors will also be contributing an additional source of output increase (For further details, refer Manoj Kumar Dash, Gaurav Kabra, Ajay Singh: 2010).


Increase in labour productivity may be due to improved efficiency and technological progress as well as more capital per unit of labour, and the two sets of influences do not operate independently of each other. More specifically, labour productivity may increase because of factors such as learning by-doing, experience, improved skills, etc., and because there are better and more machines to work with. Even though it may not be possible to measure the two components of the observed increase in labour productivity between any two points in time, it is important to understand the difference conceptually.

Besides the variables embodied in the above hypothesis, several other economic and non-economic factors such as wage rate, capacity utilization, managerial efficiency, working conditions, trade unionism, government regulations, work ethics, cultural and social values, etc. have also been identified in the literature as important determinants of labour productivity growth.

It is named after Dutch Economist Petrus Johannes Verdoorn. In Economics this Law pertains to the relationship between the growth of output and the growth of productivity. According to the Law, faster growth in output increases productivity due to increasing returns. Verdoorn argued that “in the long-run a change in the volume production say about 10 per cent, tends to be associated with an average increase in
labour productivity of 4.5 per cent”. The Verdoorn coefficient close to 0.5 is also found in subsequent estimations of the Law. (www.en.wikipeida.org/wiki/verdoorn’s_law)

Kendrick Index, Solow Index, and Divisia Index-Translog etc. The Solow Index, based on the Cobb-Douglas production function takes the following form:

\[ \frac{A}{A} = \frac{Y}{Y} - \left[ (1 - \beta) \frac{L}{K} + \beta \frac{K}{K} \right]. \]

Where \( \beta \) is the income share of capital. In other words, the Solow index shows that the growth in total factor productivity is simply a difference between the rate of growth of value added and the rate of growth of weighted total factor input. It has limitations such as unitary elasticity of substitution between factors, constant returns to scale and payment to factors on the basis of their marginal productivity.

Productivity and efficiency levels/changes measured using either parametric or non-parametric methods in the literature are outlined below:

<table>
<thead>
<tr>
<th>Estimation Approach</th>
<th>Method</th>
<th>Main Options</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parametric Estimation</td>
<td>Production function</td>
<td>Cobb-Douglas, Translog, Constant Elasticity of Substitution (CES)</td>
<td>Productivity growth (Descriptive)</td>
</tr>
<tr>
<td></td>
<td>Stochastic Frontier</td>
<td>Cobb-Douglas, Translog, with alternative assumptions about the distribution of random variable ( (U_i) ) that capture inefficiency</td>
<td>Efficiency level (Normative)</td>
</tr>
<tr>
<td>Non-parametric methods</td>
<td>- Index of Productivity</td>
<td>Discrete approximations, based on the various functional forms of production functions, such as, Cobb-Douglas, Translog, etc</td>
<td>Productivity change (Descriptive)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Malmquist index based on distance functions</td>
<td>Productivity and efficiency change (Descriptive and Normative)</td>
</tr>
<tr>
<td></td>
<td>Data Envelopment Analysis (DEA)</td>
<td>Input or Output orientations, Constant/ Non-constant/Variable Returns to Scale</td>
<td>Efficiency level (Normative)</td>
</tr>
</tbody>
</table>


In other words, how much of the growth can be explained by movements along a production function and how much should be attributed to advances in technological and organizational competence. The econometric estimation of production function is an alternative. The estimation of production function permits departure from some of the assumptions underlying traditional growth accounting exercises thus
can provide a framework for testing some of these assumptions – constant returns to scale and perfect competition. (refer Deb Kusum Dhas – 2004).


d The inter-regional dimension of industrial growth is regarded as an important aspect of the development process of a country. Balanced development across the state is closely correlated with differential rates of industrial growth rates in such a reinforcing way that industrially backward region grow faster than the more industrialized regions. If the dynamics of the correlation between industrial growth and regional development are recognized in theory, there emerges an empirical question of contemporary relevance in this context. For details refer Subrahmanian K. K., ‘Inter-regional Dimension of Industrial Growth’, in The Indian Economy Since 1991, PP 361-372.

di The quotient of industrialization in terms of employment is calculated as:

Quotient of Industrialisation - Employment (Q.I.e)

\[ Q.I.e = \frac{\text{Percentage share of given district in total employment of the state}}{\text{Percentage share of a given district in total population of the state}}. \]

If the quotient of industrialization in terms of employment is greater than one \((Q.I.e > 1)\) it indicates that the district had higher share of industrialization as compared to its due share on the basis of population and if the quotient of industrialization is less than one \((Q.I.e < 1)\) it indicates, district had a lower share of industrialization as compared to its due share on the basis of population. Similarly, quotient of industrialization in terms of value added is also calculated.