PRODUCTIVE SPECIALIZATION AND REGIONAL DEVELOPMENT AT STATE LEVEL IN INDIA

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Abstract:
The purpose of this paper is to analyse the specialization of Indian productive structures in 2006, using specialization indicators, namely localization quotient estimation, in order to assess both the relative degree of concentration of a given activity in a certain area and the specialization coefficient, that helps characterize a region's economy according to its degree of specialization. Reference variables for specialization analysis purposes are Gross Domestic Product at factor cost at constant price (Base=99-00) and Employment for 2001 and 2006, in an attempt to compare differences observed between productivities, which, in turn, are related to purchasing power evolution within each territorial unit. The main aim of this study was, then, a thorough research into the time-spatial relationship between specialization, productivity and development.

Key-words: Sector Specialization; Regional Development; Specialization Index; Location quotient; Specialization Coefficient

1. INTRODUCTION

Productive specialization has always been at the heart of economic and regional development studies and recently produced regional science literature can provide some very good examples of it. It is the case of Akgüngör and Falcioğlu (2005), who addressed the question of the relationship between Turkey's transforming industry regional specialization patterns and European integration; Michaels (2006), who elaborated on the consequences of a resources-based specialization especially when it lasts for a long period; Alexiadis (2010) examined the localisation effects on regional convergence in Greece and Ezcurra et al, (2004), who wrote on regional integration in the E.U. examining the productive specialization in European Union's regions over the period from 1977 to 1999, using the information provided by various methodological instruments. The results obtained reveal a process of convergence in regional productive structures during the twenty-two year period considered.

Regarding regional integration and industrial localization, Traistaru and Iara (2002) developed research based on central and Eastern Europe countries within a project financed by E.U. Phare Program. The authors examine productive specialization in European Union regions over the period from 1977 to 1999, using the information provided by various methodological instruments. The results of their study point to a process of convergence in regional productive structures during the same period.

For Portugal Diniz and Sequeira (2009) analysed how the specialization of Portuguese productive structures has evolved between 1995 and 2004, using specialization indicators, namely

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localization quotient estimation, to assess both the relative degree of concentration of a given activity in a certain area and the specialization coefficient, that helps characterize a region's economy according to its degree of specialization.

Finally, Desrochers (2007) points out some shortcomings of traditional approaches to the study "knowledge spillovers" and suggests an alternative based on how knowledge is actually created and exchanged by individuals. Evidence is drawn from the history of technology, some Baltimore research-related activity cases conducted at the Johns Hopkins University and from a survey of Southern Quebec inventors, stressing the fact that regional specialization has long been thought of as both the logical outcome of market competition and the best geographical setting for innovation.

Partly as a result of this belief, policies promoting regional specialization through "industrial clusters" have enjoyed worldwide popularity in the last decade. In recent years, however, a heated debate as to whether local diversity or specialization of economic activity is the best incubator of technological change and economic growth has been raging.

According to Ahluwalia (2002) regional development has always been one of the declared objectives of national policy in India and so it is relevant to ask whether economic reforms have promoted this objective. India's federal democracy has been increasingly characterised by regionalization at state level, turning economic performance of individual states into an issue of potential electoral importance.

Recently a number of studies have established that regional disparity in India has widened, especially during the 1990s e.g. Ahluwalia (2000 and 2002); Shand and Bhide (2000). However, these studies have used pre-revised state domestic product (SDP) data.

For Lahiri (1969), regional disparities become clear when one compares proportionate distribution of population and industrial employment.

With recourse to specialization indicators, such as the localization quotient, which allows to assess the relative degree of concentration of a given activity in a given region and the specialization coefficient, which enables the characterization of a region's economy according to its higher or lesser specialization, it was possible to analyse the specialization evolution of Indian regional productive tissue in 2006. The reference variables chosen were Gross Domestic Product at factor cost at constant price (Base=99-00) for 2001 and 2006 and Employment for only 2006. The differences found were compared with productivities, which, in turn, were related to GDP per worker within each territorial unit. The main purpose of this study was, thus, to go deeper into the spatial and time relationship between specialization, productivity and development.

2. METHODOLOGICAL ASPECTS

2.1. Variables analysed

Productive specialization indicators used in this study focussed on two variables: - GDP and Employment in 2006. The territorial unit comprised Indian States and the reference unit was the whole of India's national territory.

In the case of employment, the origin of the worker is taken into consideration. That leaves room to three different types of analysis. Rural and urban employment can be dealt separately as well as together.

Data were collected from "Employment and Unemployment Situation in India 2005-06" National Sample Survey Organisation, Ministry of Statistics and Programme Implementation, Government of India, January 2008 and State Analysis Service.

Concentration/distribution of economic activities was analysed based on data for GDP and Employment concerning primary, secondary and tertiary sectors, respectively.

2.2. Productive Specialization indexes

Specialization indicators are statistic analysis measures which allow us to infer thesis and conclusions about the productive structure specialization of each territorial unit at two levels. On the one hand, they measure each territorial unit specialization compared against a reference model, both in global terms and for each of the activity sectors taken into consideration. In this case we are before relative specialization indicators, of which both the localization quotient and the specialization coefficient are two examples. On the other hand, it is possible to build absolute specialization indicators for each territorial unit, which will deal with characteristics revealed by the variable sectoral distribution in that territorial unit.

Localization Quotient

This indicator (LQ) is a localization measure, in the sense that it allows us to assess the relative concentration degree of a given activity (k) in a given region (i). Analytically $LQ_{ik} = (x_{ik}/x_j)/(x_k/x)$, where the numerator measures the concentration of the gross value added of region i in sector k and the denominator measures the concentration of the reference region's gross value added in sector k. The reference basis is the unit. Thus:

- ✓ $LQ_{ik} < 1$ – means that sector k in region i is not very significant, and that the region is not particularly specialized in sector k;
- ✓ $LQ_{ik} = 1$ – in this case the relative importance of sector k in region i equals its importance in the reference region;
- ✓ $LQ_{ik} > 1$ – means that sector k in region i plays an important role, and that the region is relatively specialized in sector k.

Localization quotients are useful tools to characterize regions internally and to compare them both among themselves and to the reference territorial unit. Additionally the analysis of their evolution in time, namely using descriptive statistical measures, allows us to approach the regions' internal dynamics as well as their inter-relationships, (Delgado and Godinho, 2005).

Specialization Coefficient

Determining the region's specialization coefficient (SCi) requires calculating its employment percentage in each sector, x_{ik}/x_i, and the same percentage relative to pattern x_k/x, determined by the following expression: $SC_i = \sum_{k=1}^{k} \left[\left| (x_{ik}/x_i) - (x_j/x) \right| \right] / (k-1)$.

The index allows us to characterize the region's economy in terms of its higher or lower specialization regarding its productive structure, when compared to the patterns with a variation in the interval $[0,1[$. If $SC_i = 0$, there is no specialization in region i compared to the pattern. The nearer the SC_i value is to 1 the higher the specialization of region i compared to the reference pattern (Delgado and Godinho, 2005).

2.3. Multiple Linear Regression

In order to establish a relationship between development, productivity and regional specialization a multiple linear regression is also performed, using SPSS statistical software.

As explaining variables we selected productivity, measured by the GDP per worker. As regards specialization, of the various indicators considered, Localization Quotient (LQ) concerning industry produced the best results. Because of an obvious multicolinearity problem and in view of the results obtained we decided to eliminate Rural Employment Localization Quotient for the primary sector, Urban Employment Localization Quotient for the tertiary sector, Rural/Urban Employment Localization Quotient for the primary sector and GDP Localization Quotient for the secondary sector. The data refer to 2006.

3. ECONOMETRIC RESULTS AND ANALYSIS

Further considerations are based on the analysis of results obtained by calculating the indexes presented before. The different States of India composed the territorial units to be studied and were taken in relation to the whole of the national territory for 2006.

3.1 Localization Quotient (L.Q)

Employment

- Primary Sector

- Rural

When rural persons are taken into consideration, this sector plays a more significant role in Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Himchal Pradesh, Kamataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan and Uttaranchal, i.e., each of these States is relatively specialised in the primary sector than all India. The level of specialisation is 10% above all India one only in Kamataka, Madhya Pradesh and Maharashtra. All the other Sates but Uttar Pradesh, are not so specialized in the primary sector. That Sate has the same pattern as all India.

- Urban

Delhi, with a LQ=0 for the primary sector, proves to be predominantly a Service city, where the central government is based. Most of the Sates followed the pattern of all India. Well above that pattern are Bihar and North-eastern States (LQ>2). In the primary sector is less important than all India's pattern for urban persons.

- Rural/Urban

When all the persons come into analysis, employment in the primary sector indicates that the specialisation is far below the pattern of all India in only three Sates, namely in Delhi, where the location quotient is almost zero. A similar situation can be seen in Goa and in the Group of UT's States, where LQ<0.4.

- Secondary Sector

- Rural

The secondary sector is well above all India (LQ>1.5) in Goa, Kerala, in the Group of UT's. Tamil Nadu, and Jharkand. The same patterns as in all India can be found in Himchal Pradesh, Gujarat and Uttar Pradesh. All other States are more than 10% below the pattern of all India, the most distant being Chhattisgarh.

- Urban

Two thirds of the States follow the pattern of all India when a combination of both rural and urban population in the primary sector is analysed. In Uttaranchal and in the North-eastern State the secondary sector plays a relatively minor role, with a Location quotient lower than 0.5.

- Rural/Urban

In exactly one third of all States, the secondary sector is less significant than in the all India pattern. Assam and Chhattisgarh have a localisation quotient lower than 0.5. All the other States have either a similar pattern or the secondary sector is more significant, when both rural and urban workers are taken into consideration. Goa and the Group of UT's have a LQ > 1.5 which can be accounted for by their relative weight in all India and, in the case of Goa, by the importance of its mining activity, which is included in the secondary sector.

- Tertiary Sector

- Rural

Delhi (LQ<5) followed by Kerala (LQ>2) and the Group of UT's (LQ>1.5) are the Sates where the tertiary sector is more important than in all the country. Delhi attracts rural population to work on the

services sector. Himchal Pradesh, Orissa, and Jharkhand have almost the same pattern as all India. Chhattisgarh is the State which is the most distant from the pattern.

- Urban

In all the Sates the pattern for all India is present for urban persons employed in the Service sector. Urban areas are places where this sector definitively flourishes.

- Rural/Urban

In about one third of all Sates of India, the tertiary sector is less important than the pattern of all country. Except for Chhattisgarh with an LQ equal to 0.51, all the other six States (Bihar, Himchal Pradesh, Jharkhand, Madhya Pradesh, Orissa and Rajasthan) have a LQ > 0.7.

The rest of the Sates follow the pattern of all the country. Delhi has a location quotient a little above 3 and Goa above 2. This can be explained by the presence of the central government ministries and other governmental departments in Delhi and the importance of the tourism sector in Goa.

Therefore, it is possible to say that India is becoming a services' economy, thus accompanying the pattern of developed countries.

GDP

- Primary Sector

For 2006, in most of the primary sector, Gross Domestic Product at factor cost at constant price share is above the pattern of all India, although the value of localization quotient does not exceed 1.6.

Only in seven States (Delhi, Goa, Gujarat, Jharkhand, Kerala, Maharashtra and Tamil Nadu) is the primary sector less important than in all India. For all of the States but Delhi, the localization quotient is above 0.5. Delhi presents a very low LQ, around zero, which means that the primary sector's contribution to the formation of Gross Domestic Product is residual.

When one calculates the Localization Quotient in a more disaggregated sector approach, one can clearly see that the Agricultural sector shows a significant level of relevance only in Punjab and Uttar Pradesh, compared to the situation in the whole of India. Notwithstanding the highest LQ value, 1.71, is for Punjab, in 2006.

Forestry and logging is significant in Bihar, Himachal Pradesh, Karnataka, Rajasthan and Uttarakhand. Localization quotient value is a little higher than 2 only in Bihar, in 2006. In Delhi, Goa and Gujarat forestry is the least important economic activity.

Fishing is the most important economic activity in Andrha Pradesh, Goa, Kerala and West Bengal. In these States the LQ is higher than 3 for 2001 and 2006. In Kerala the Fishing sector lost some of its importance between 2001 and 2006 and was replaced by the Construction sector, which indicates a change in this State's specialization pattern. This sector shows the least degree of specialization in Haryana, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, Uttarakhand and Uttar Pradesh.

- Secondary Sector

For 2006, 11 States follow the pattern of all India in this sector, with a localization quotient between 0.8 and 1. Another three States (Bihar, Delhi and West Bengal) have a LQ higher than 0.5, but they do not exceed 0.75.

In the rest of the Indian regions, the secondary sector plays a more important role than in all India. The most industrialized ones are Chhattisgarh, Goa, Gujarati and Jharkhand, with an LQ in the interval of [1.4, 1.7].

Comparing the situation which occurred between 2001 and 2006, when the localization quotient is calculated for the sub-sectors of Mining and Quarrying, Manufacturing, Electricity, Gas & Water Supply and Construction, the situation is as follows: 1- Mining and Quarrying is more significant than the all India pattern in Assam; Chhattisgarh; Jharkhand; Madhya Pradesh and Orissa. In Chhattisgarh this sector is over 7 times more important than in the whole of the country for both 2001 and 2006; 2- Manufacturing is well above the all India pattern in Gujarat, Haryana, Tamil Nadu and the North-eastern States both in 2001 and 2006. In the latter, the share of the GDP of this sub- sector is 4 times more than the whole of India; 3- Electricity & Gas and Water Supply is significantly more relevant in Jammu & Kashmir than in all India.

For the secondary sub-sector of Mining and Quarrying, the least important Sates are: Bihar, Karnataka, Kerala, Punjab and Tamil Nadu and for Manufacturing this pattern can be found in Andhra Pradesh, West Bengal, North-eastern States and the Group of UT's.
Orissa and Chhattisgarh are the States where construction has less relevance. In 2001 in Orissa and in 2006 in Assam and Chhattisgarh, Trade, Hotels & Restaurants and Finance-related activities play the least important role in terms of specialization pattern.

- Tertiary Sector

In what concerns this sector, the situation is most similar to the one observed for the all India pattern. Localization quotient is lower than 1 in eight states, although it never drops below 0.7.

The regional pattern of the tertiary sector may be said to have a tendency to overcome its importance in relation to the all India pattern. Indian economy is treading on the same path as the most developed countries.

Delhi confirms its position as a service region with a localization quotient of 1.53. As referred above, in the analysis for the Employment localization quotient for Goa, due to the relevance of tourism as an economic activity, the region follows Delhi. However when Gross Domestic Product at factor cost becomes the variable in question, the situation no longer remain the same. Goa has an LQ = 0.95. This reinforces the idea that the real role of tourism as a strategic economic activity for the regional development process should be questioned. Not everything that shines is gold, indeed.

Delhi and Maharashtra, most certainly on account of Mumbai, are the Sates where Finance, Insurance, Real Estate and Business services are the financial heart of India and finally, Community services and Personal services is the most important activity in the Group of UT'S.
Trade, Hotels & Restaurants in Orissa, in 2001, and Finance, Insurance, Real Estate and Business services in Assam and Chhattisgarh are the least important activities regarding specialization, compared to the situation of the whole of India.

Transport, Storage & Communication and Community services and Personal services are activities regarding which no State in particular has a significant degree of specialization.

3.2. Specialization Coefficient (SC)

We should bear in mind that SC*i* ε [0 - 1]. In the case of the limit inferior, both the territorial unit *i* and the reference space have identical specialization profiles; therefore that territorial unit has no relative specialization. The higher the specialization coefficient (closer to 1), the more the territorial unit *i* has a specialized productive structure compared to the productive structure of the reference space, since the specialization profile of territorial unit *i* is very different from what the reference territorial space shows.

Precisely because we are dealing with a relative specialization measure, a low specialization coefficient does not necessarily entail a diversification of the regional productive structure but rather a proximity between specialization profiles both of the territorial unit *i* and of the reference space.

Employment

In view of the results obtained by calculating the Specialization Coefficient (SCi Employment), it is not clear whether a specialization of the Indian economy is actually taking place. Figures are far from 1, which means that the level of specialization is not significant at State level. Delhi could be the exception, with a SC above 0.5, when both rural and urban workers are in analysis. The fact that it is the rural situation of the workers which contributes most for differentiation in the specialization pattern may be construed as a paradox. Services and to a lesser extent industries are attracting rural man-power to urban areas, thus creating problems which have to do with these areas being unable to cope with a rural exodus, such as housing, water and electricity supply as well as hygienic conditions. Then it becomes legitimate to ask oneself whether the strong, ongoing growth process that is now occurring in India can be translated into a development process with the inherently well being of all of the population.

GDP

If terms of employment, Specialization Coefficient does not show a clear evidence of a regional specialization; the same occurs when Gross Domestic Product at factor cost is taken into consideration. The values of SCi are below 0.3 for all the States, with Delhi again having the highest value, 0.29 and 0.27, in 2001 and 2006, respectively.

3.3. Regression estimation

$$Y = \beta_0 + \beta_1\ LQII\ E-R + \beta_2\ LQIII\ E-R + \beta_3\ LQI\ E-U + \beta_4\ LQII\ E-U +$$
$$\beta_5\ LQII\ E-R/U + \beta_6\ LQIII\ E-R/U + \beta_7\ Sci\ E-R + \beta_8\ Sci\ E-U +$$
$$\beta_9\ Sci\ E-R/U + \beta_{10}\ LQ\ GDP-I + \beta_{11}\ LQ\ GDP-III + \mu_i$$

where Y is the dependent variable (Productivity) and the others variables are explanatory variables; μi the stochastic disturbance term of ith observations; β0 is the constant term which gives the average effect of all the variables on Y; and β1…… β11 are regression coefficients.

As expected, there is a positive relationship between productivity on fifteen independent variables. The data set of analysis of multiple regression of 4 independent variables are highly correlated; therefore it represents multicollinearity i.e. tolerance is very low in collinearity (see Table 1).

Table 1- Excluded Variables

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	LQ I E- R	.[a]	.	.	.	.000
	LQ III E - U	.[a]	.	.	.	.000
	LQ I E - R/U	25.961[a]	.353	.731	.106	1.021E-6
	LQ GDP - II	-298.320[a]	-.397	.699	-.119	9.767E-9

a. Predictors in the Model: (Constant), LQ GDP - III, LQ II E- R, LQ I E - U, LQ II E - U, LQ GDP - I, Sci E -R/U, LQ III E -R, Sci E- U, LQ III E- R/U, Sci E- R, LQ II E- R/U

b. Dependent Variable: Productivity

According to table 1, 4 independent variables were excluded, namely LQ I E- R, LQ III E – U, LQ I E - R/U & LQ GDP – II. The eleven independent variables analysis based on the R2 value is 0.94, which means that 94 percent of the variation in productivity is explained by eleven variables (see Table 2).

The regression model explains the variation in the dependent variable fairly well; the adjusted R^2 is 0.882. The ANOVA tables shows the F value, which is the proportion of variation explained by variables in the model, is significantly good i.e. p value = .000 (see Table 3). Also, if the overall model is significant, then at least 1 or more of the individual variables will most likely have a significant relationship with the dependent variables. In individual significance, only two predictors were positively related to the outcome variable, such as (Localization Quotient Tertiary Sector Employment Rural/Urban) LQ III E- R/U (β = 1.77, p = .05), (Specialization Employment Rural/Urban) Sci E -R/U (β = 6.387, p = .08) and rest of other independent variables are non significant. The 1.532 intercept value means that if the value of independent variables were fixed at zero, the mean productivity would be about 1.532 (see Table 4). It can be concluded that there was a positive significant relationship between LQ III E- R/U & Sci E -R/U. Furthermore, 94% of the variability in productivity could be explained by explanatory variables.

Table 2 – R^2

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.969	0.939	0.882	0.456

Table 3 – ANOVA[b]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	37.851	11	3.441	16.652	.000[a]
Residual	2.480	12	.207		
Total	40.330	23			

Table 4 – Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	1.532	1.997		.767	.458
LQ II E- R	-.675	1.357	-.267	-.497	.628
LQ III E -R	-.076	.386	-.054	-.196	.848
LQ I E - U	-.366	.240	-.146	-1.526	.153
LQ II E - U	-.570	1.798	-.095	-.317	.757
LQ II E- R/U	.784	2.344	.221	.335	.744
LQ III E- R/U	1.766	.823	.776	2.146	.053
Sci E- R	-3.700	3.482	-.402	-1.062	.309
Sci E- U	-3.922	4.060	-.203	-.966	.353
Sci E -R/U	6.387	3.438	.651	1.858	.088
LQ GDP - I	-.511	.391	-.139	-1.306	.216
LQ GDP - III	-.853	1.109	-.109	-.769	.457
Dependent Variable: Productivity					

4. FINAL REMARKS

This paper was motivated by a first approach to the time-space relationship between productive specializations, on the one hand, and productivity and the level of territorial development measured by the productivity per worker, on the other hand.

India is a vast and heterogenic country. The tradition of heterodoxy has a clear relevance for democracy and secularism in India, and may have helped Indian Philosophy as well as other sciences, but it also raises some questions like the recognition of inequalities if regional peace is to be easily pursued. The features of Indian's unity vary greatly with the context. For instance, the statistical argument that more than four-fifths of Indian citizens are Hindus in terms of standard classification cannot be used as enough ground for an immediate identification of India as pre-eminently Hindu country. Is historical reasoning behind seeing India as mainly a Hindu country not to consider the role of other religions (Muslim and Buddhism) in the construction of the Indian identity?

Two most meaningful Indian ideologists, Tagore and Gandhi, had different views which were expressed by Jawaharlal Nehru in his prison dairy, when learning of Tagore's death in 1941 "Gandhi and Tagore two types entirely different from each other and yet both of them typical of India, both in the long line of India's great men..." Tagore had a great admiration for Mahatma Gandhi as a person and as a political leader, but he was also highly sceptical of Gandhi's form of nationalism and his

conservative instincts regarding the country´s past traditions. Tagore diverged from Gandhi, for example, on the merit of Gandhi's forceful advocacy that everyone should spin at home with the "charka", the primitive spinning wheel. For Gandhi, this practice was an important part of India's self civilization. "The spinning wheel gradually became the centre of rural uplift in the Gandhian scheme of Indian economics" Nanda, B. R. (1958) Tagore, on the contrary, found the alleged economic rationale for this scheme quite unrealistic.

Two main conclusions may be drawn from this paper: first, the results do not allow us to say that there is a strong degree of specialization in industry at State level in India, when employment and GDP are taken into consideration; and, second, it is employment in the tertiary sector which contributes most to productivity.

Can today's India be considered a modernized country? Or is it still an ancestral country, holding fast to traditional ways of organizing its economy?

Clear and precise answers to these questions are not to be found in this piece of research. More detailed data either on employment or GDP in each State or, better still, on smaller territorial units are essential to refine the analysis so that it may lead to the confirmation or refusal of present results. It will also be interesting to have an annual evolution of a longer period, in order to observe changes in pattern, taking into consideration the time factor.

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Data Bases: State Analysis Service (India)

Annex 1 - Indian Sates Localization Quotient (Lqik) - Employment - 2006

	LQE I - R	LQE II - R	LQE III -R	LQE I - U	LQE II - U	LQE III - U	LQE I - R/U	LQE II - R/U	LQE III - R/U
Andhra Pradesh	1,03	0,88	0,97	0,85	1,01	1,02	1,04	0,91	0,97
Assam	0,98	0,45	1,66	0,38	0,52	1,37	1,10	0,40	1,22
Bihar	1,06	0,62	1,10	2,18	0,56	1,10	1,22	0,53	0,84
Chhattisgarh	1,26	0,38	0,37	1,30	0,81	1,07	1,38	0,43	0,51
Delhi	0,12	1,30	5,04	0,00	0,76	1,28	0,02	1,33	3,19
Goa	0,46	2,38	2,21	0,99	0,88	1,07	0,29	1,69	2,21
Gujarat	1,05	0,99	0,77	0,71	1,19	0,93	0,96	1,15	0,97
Haryana	0,89	1,19	1,34	0,90	1,06	0,98	0,88	1,16	1,18
Himchal Pradesh	1,01	1,00	0,97	1,86	0,93	0,92	1,16	0,86	0,72
Jammu & Kashmir	0,85	1,40	1,31	1,03	0,97	1,01	0,89	1,22	1,10
Jharkhand	0,89	1,58	0,92	1,11	0,92	1,03	0,97	1,31	0,83
Kamataka	1,10	0,76	0,78	1,20	1,05	0,94	1,07	0,89	0,91
Kerala	0,58	1,72	2,32	1,90	0,92	0,92	0,61	1,43	1,62
Madhya Pradesh	1,21	0,55	0,41	1,14	0,91	1,03	1,24	0,66	0,69
Maharashtra	1,12	0,66	0,74	0,94	0,98	1,02	0,99	0,91	1,10
Orissa	1,02	1,01	0,90	1,24	0,99	0,98	1,12	0,91	0,77
Punjab	0,85	1,17	1,55	0,85	0,99	1,03	0,77	1,18	1,42
Rajasthan	1,02	1,30	0,62	0,88	1,04	0,99	1,07	1,16	0,71
Tamil Nadu	0,86	1,53	1,15	1,21	1,09	0,92	0,76	1,46	1,22
Uttaranchal	1,06	0,88	0,85	0,85	0,35	1,40	1,11	0,69	0,99
Uttar Pradesh	1,00	0,99	1,01	0,96	1,08	0,96	1,04	0,98	0,91
West Bengal	0,79	1,64	1,39	0,58	1,11	0,99	0,77	1,45	1,22
North-eastern States	0,97	0,68	1,46	2,26	0,44	1,15	1,05	0,58	1,21
Group of Uts.	0,55	2,26	1,92	0,81	0,87	1,10	0,40	1,68	1,96
All India	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00

Note: Primary sector excluding "Mining and Quarrying". Mining and Quarrying is included in the estimates of secondary sector. Number of workers includes all the workers with principal and subsidiary activities
Source: "Employment and Unemployment Situation in India 2005-06" National Sample Survey Organisation, Ministry of Statistics and Programme Implementation, Government of India, January 2008 and own calculations.

Annex 2 - Indian States - Localization Quotient (Lqik) – State Gross Domestic Product at factor cost at constant price (Base=99-00) – 2001

2001	**Agriculture, F & F**	Agricuture	Forestry & L	Fishing	**Industry**	Mining & Q	Manufacturing	Elelectricity, G &W S	Construction	**Services**	Trade, Hotel & Rest.	Trans., S. & Comm	Fin., I , R S & BS	Comm. S.& P S
Andhra Pradesh	**1,23**	1,18	0,99	2,31	**0,89**	1,55	0,79	0,92	0,92	**0,95**	0,95	0,95	0,89	1
Assam	**1,38**	1,38	1,27	1,45	**0,71**	2,98	0,44	0,4	0,82	**0,96**	0,86	0,78	0,49	1,6
Bihar	**1,58**	1,59	1,59	1,21	**0,42**	0,13	0,4	0,47	0,54	**1,01**	1,06	0,91	0,53	1,46
Chhattisgarh	**0,81**	0,73	2,12	1,23	**1,49**	7,69	0,97	2	0,61	**0,85**	0,79	0,85	0,7	1,04
Delhi	**0,05**	0,06	0	0,03	**0,76**	0,01	0,71	0,44	1,25	**1,59**	1,51	1,48	2,27	1,08
Goa	**0,45**	0,38	0,16	2,19	**1,65**	1,92	2,1	0,64	0,96	**0,94**	0,87	1,45	0,99	0,7
Gujarat	**0,61**	0,6	0,35	1,03	**1,58**	1,39	2	1,03	0,87	**0,89**	0,95	0,99	0,91	0,77
Haryana	**1,23**	1,31	0,71	0,12	**1,1**	0,18	1,36	0,49	1,04	**0,84**	1,05	0,9	0,76	0,67
Himachal Pradesh	**1,01**	0,95	3,18	0,19	**1,44**	0,19	0,84	1,85	3,07	**0,77**	0,65	0,48	0,61	1,2
Jammu & Kashmir	**1,22**	1,2	2,26	0,64	**0,92**	0,07	0,3	3,32	1,52	**0,93**	0,52	0,47	0,8	1,7
Jharkhand	**0,71**	0,7	1,48	0,23	**1,6**	7,59	1,21	0,77	1,12	**0,84**	0,67	1,09	0,52	1,17
Karnataka	**1,15**	1,16	1,49	0,55	**0,95**	0,34	0,94	0,95	1,15	**0,95**	0,82	0,82	1,24	0,87
Kerala	**0,89**	0,81	1,59	1,91	**0,83**	0,17	0,65	0,79	1,46	**1,14**	1,47	1,22	0,97	0,94
Madhya Pradesh	**0,96**	0,96	1,68	0,23	**1,01**	1,91	0,87	1,03	1,08	**1,01**	1,17	0,86	0,85	1,09
Maharashtra	**0,62**	0,63	0,66	0,33	**1,08**	0,47	1,31	0,97	0,79	**1,14**	1,02	1,23	1,54	0,85
Orissa	**1,17**	1,09	2,57	1,41	**0,97**	2,81	0,67	1,08	1,09	**0,93**	0,66	0,99	0,73	1,35
Punjab	**1,49**	1,6	0,31	0,24	**0,91**	0	1,02	1,16	0,8	**0,81**	0,89	0,67	0,67	0,92
Rajasthan	**1,16**	1,19	1,54	0,06	**1,09**	1,24	0,88	1,5	1,36	**0,88**	0,99	0,74	0,76	0,95
Tamil Nadu	**0,68**	0,66	0,41	1,25	**1,2**	0,26	1,37	1,06	1,12	**1,06**	1,09	1,19	0,98	1,03
Uttarakhand	**1,12**	1,14	1,91	0,05	**0,88**	0,36	0,78	0,67	1,39	**1**	1,23	0,97	0,7	1,07
Uttar Pradesh	**1,38**	1,45	0,86	0,34	**0,89**	0,55	0,86	1,39	0,85	**0,87**	0,9	0,97	0,76	0,89
West Bengal	**1,18**	1,1	0,74	3,33	**0,71**	0,73	0,7	0,61	0,8	**1,06**	1,06	1	1,08	1,06
North-eastern States	**0,94**	0,94	1,17	0,73	**0,94**	4,62	0,12	1,13	1,72	**1,06**	0,67	0,81	0,99	1,63
Groupe of UT's	**1,13**	1,09	1,99	1,13	**0,75**	0,31	0,26	1,1	1,89	**1,07**	0,68	0,76	0,63	2

Source: State Analysis Service and own calculations.

Annex 3 - Indian States - Localization Quotient (Lqik) – State Gross Domestic Product at factor cost at constant price (Base=99-00) – 2006

2006	**Agriculture, F. and F.**	Agricuture	Forestry & L.	Fishing	**Industry**	Mining & Q.	Manufacturing	Elelectricity, G a&W.S.	Construction	**Services**	Trade, Hotel & Rest.	Transport, S. & Comm.	Finance, i. , R.S. & B:S:	Community S. & P. S.
Andhra Pradesh	1,24	1,2	0,88	2,42	0,9	1,61	0,78	0,93	0,95	0,96	0,9	1,06	0,87	1,04
Assam	1,34	1,33	1,22	1,55	0,8	2,47	0,66	0,76	0,68	0,97	0,97	0,83	0,44	1,7
Bihar	1,39	1,34	2,08	1,75	0,54	0,06	0,35	0,44	1,04	1,09	1,37	0,78	0,54	1,61
Chhattisgarh	1,09	1,06	1,67	1,3	1,41	7,86	1,02	1,42	0,63	0,75	0,76	0,72	0,54	0,98
Delhi	0,04	0,05	0	0	0,72	0	0,61	0,48	1,18	1,53	1,5	1,32	2,11	1,05
Goa	0,5	0,39	0,18	2,88	1,48	2,13	1,99	0,71	0,6	0,95	0,55	1,87	1,11	0,56
Gujarat	0,85	0,87	0,33	0,8	1,47	1,08	1,96	0,97	0,79	0,81	0,96	0,89	0,79	0,6
Haryana	1,06	1,12	0,64	0,13	1,1	0,2	1,29	0,56	1,12	0,92	1,09	1,05	0,9	0,67
Himachal Pradesh	1,14	1,1	3,14	0,16	1,39	0,18	0,81	2,83	2,32	0,73	0,61	0,43	0,6	1,26
Jammu & Kashmir	1,39	1,39	2,4	0,59	0,9	0,09	0,39	2,4	1,59	0,89	0,54	0,65	0,68	1,72
Jharkhand	0,62	0,6	1,5	0,32	1,69	5,86	1,71	0,5	1,06	0,78	0,72	1,03	0,47	1,04
Karnataka	0,91	0,91	1,34	0,46	1,07	0,52	1,11	0,91	1,18	1	0,88	0,91	1,31	0,84
Kerala	0,8	0,74	1,46	1,44	0,87	0,25	0,49	0,75	1,77	1,15	1,36	1,29	0,93	1,05
Madhya Pradesh	1,28	1,31	1,85	0,25	0,93	2,01	0,67	1,37	1,03	0,93	0,98	0,84	0,8	1,08
Maharashtra	0,63	0,65	0,49	0,3	0,97	0,41	1,25	1,03	0,55	1,17	1,1	1,02	1,63	0,81
Orissa	1,2	1,14	2,35	1,38	0,97	3,59	0,81	1,27	0,57	0,93	0,81	1,15	0,62	1,28
Punjab	1,59	1,71	0,31	0,37	0,88	0,01	0,97	1,34	0,78	0,83	0,87	0,84	0,63	1
Rajasthan	1,33	1,37	1,93	0,07	1,09	1,26	0,8	1,19	1,56	0,82	0,92	0,78	0,68	0,9
Tamil Nadu	0,61	0,59	0,4	1,23	1,12	0,28	1,33	0,64	1,08	1,09	1,18	1,19	1,01	1,02
Uttarakhand	0,96	0,97	1,81	0,04	1,12	0,78	0,83	1,38	1,66	0,95	1,09	0,98	0,56	1,22
Uttar Pradesh	1,4	1,47	1,04	0,42	0,96	0,6	0,85	1,5	1,07	0,86	0,76	1,02	0,71	1,04
West Bengal	1,21	1,1	1	3,37	0,72	0,67	0,65	0,77	0,84	1,07	1,01	1,02	1,12	1,11
North-eastern States	1,01	1,02	1,4	0,58	1	4,61	0,31	1,29	1,35	1	0,69	0,86	0,8	1,66
Groupe of UT's	1,23	1,2	1,9	1,17	0,87	0,39	0,23	1,36	2,02	0,98	0,56	0,73	0,59	2,07

Source: State Analysis Service and own calculations.

Annex 4 - Indian States - Specialization Coefficient (SCik) - Employment -2006

	Sci-E- R	Sci-E -U	Sci -E- R/U
Andhra Pradesh	0,02	0,01	0,03
Assam	0,10	0,21	0,11
Bihar	0,06	0,15	0,13
Chhattisgarh	0,18	0,07	0,22
Delhi	0,62	0,16	0,57
Goa	0,38	0,04	0,41
Gujarat	0,04	0,06	0,03
Haryana	0,08	0,02	0,07
Himchal Pradesh	0,00	0,07	0,09
Jammu & Kashmir	0,10	0,01	0,06
Jharkhand	0,09	0,03	0,06
Kamataka	0,07	0,03	0,04
Kerala	0,30	0,07	0,22
Madhya Pradesh	0,15	0,03	0,14
Maharashtra	0,09	0,01	0,02
Orissa	0,02	0,02	0,07
Punjab	0,10	0,02	0,13
Rajasthan	0,06	0,01	0,07
Tamil Nadu	0,10	0,05	0,14
Uttaranchal	0,04	0,23	0,06
Uttar Pradesh	0,00	0,03	0,03
West Bengal	0,15	0,04	0,14
North-eastern States	0,07	0,19	0,08
Group of Uts.	0,32	0,06	0,35
All India	0,00	0,00	0,00

Note: Primary sector excluding "Mining and Quarrying". Mining and Quarrying is included in the estimates of secondary sector. Number of workers includes all the workers with principal and subsidiary activities
Source: "Employment and Unemployment Situation in India 2005-06" National Sample Survey Organisation, Ministry of Statistics and Programme Implementation, Government of India, January 2008 and own calculations.

Annex 5 - Indian States - Specialization Coefficient (SCik) – State Gross Domestic Product at factor cost at constant price (Base=99-00) – 2001 and 2006

State	Sci GDP 2001	Sci GDP 2006
Andhra Pradesh	0,06	0,05
Assam	0,09	0,07
Bihar	0,15	0,13
Chhattisgarh	0,12	0,13
Delhi	0,29	0,27
Goa	0,17	0,13
Gujarat	0,10	0,13
Haryana	0,11	0,04
Himachal Pradesh	0,05	0,14
Jammu & Kashmir	0,05	0,08
Jharkhand	0,15	0,19
Karnataka	0,04	0,02
Kerala	0,07	0,07
Madhya Pradesh	0,01	0,06
Maharashtra	0,09	0,09
Orissa	0,04	0,04
Punjab	0,12	0,12
Rajasthan	0,06	0,09
Tamil Nadu	0,08	0,08
Uttarakhand	0,03	0,03
Uttar Pradesh	0,09	0,08
West Bengal	0,07	0,08
North-eastern States	0,03	0,00
Groupe of UT's	0,06	0,05

Source: State Analysis Service and own calculations.