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REGIONAL PATTERN OF INVESTMENT IN HEAVY INDUSTRIES OF UTTAR PRADESH, IN INDIA DURING POST REFORM PERIOD

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ABSTRACT

Industrialisation has been an integral issue for the development of the state in a developing economy. The level of industrialisation is analysed by the level of investment input mobilised for the heavy industries in terms of the fixed capital. The fixed capital investment describes the commitment of private as well as public sector in the industrial growth of the state. This may be accorded as the faith in the policy as well as the increase in the confidence of the entrepreneurial activities in the state. Uttar Pradesh has been one of the largest and leading states in terms of the population as well as gross resources in the India. The post reform policy of the economic development has envisaged a self dependent and with more than nine percent growth rate of the country. Hence the target of achieving the goal does requires the huge contribution of the state like Uttar Pradesh which had seen a negative growth rate of 4.3 percent. The State of Uttar Pradesh has an apparition of new developed state and industrialisation is one of the means to this. The paper has an objective to analyse the direction of entrepreneurial activities that can help the policy makers to trigger the industrial investment in the various regions of Uttar Pradesh. The paper tries to find out the agglomeration of investment in various kinds of industries in the four regions of Uttar Pradesh with the help of balassa index.

KEYWORDS: Heavy Industry, Uttar Pradesh, Investment, Balassa Index.

INTRODUCTION

The industrial investment is one of the reflections of the growth of the economic

activities of the state. It can influence the barometer of the economic development of the state. The investment in the heavy industry influences the spurt of related and

unrelated industrial activities in the state thereby providing gear to the various economic activities in the region. The importance of the investment in the industrial sector defines the magnitude of the industrial activity in a region. Rosentein-Roden along with Paul N (1943)¹ and Nurkse (1953)² have argued upon the vicious circle of the investment in the industrial sector and the development of the market for the growth of a region. The absence of investment leads to the absence of industrial activity, resulting in the loss of income with a cumulative effect upon decline of agricultural as well as service sector. This results in the absence of spendable income and savings further resulting in absence of market, viz. a viz. effecting to the absence of the reasons to industrial investment. This is a cycle that continues in the absence of specific regional planning of industrial agglomeration and economic growth.

In Uttar Pradesh, one of the most populous states of India, the dynamics of investment in the industrial sector has changed in the post reform period. With the shift in the industrial policy the spatial pattern of the industrial development in the Uttar Pradesh required a special attention for the shaping of the regional investment policies and the development of the socio economic infrastructure. The new economic geography of Uttar Pradesh particularly after post reform period has arisen as a compelling alternative paradigm for the investment and industrial location. Therefore it becomes important to trace the regions that may emerge with a stronger manufacturing base, which would eventually attract more industries involved in intermediate activities. The paper attempts to capture the agglomeration of the industries in the various regions of Uttar Pradesh.

REGIONAL CONFIGURATION AND STATUS OF INDUSTRIES IN UTTAR PRADESH

Besides known for its enormity of problems and diversified nature of economy, U.P. has the highest share of 16.2 percent in total population of India. It is also the fourth largest state of country in terms of geographical area. According to 2001 Census, its density of population works out to as high as 689 persons compared to 325 persons per square kilometer on all India level.³ It is characterized by low level of per capita income, low levels of agricultural and industrial productivity, low level of urbanization, low literacy percentage and high incidence of poverty and unemployment. Not only this, even in the matter of credit-deposit ratio, it is found to be the lowest only next to Bihar in 2001-02 as against the highest 107.09 per cent in Maharashtra followed by 84.39 per cent in Tamil Nadu.⁴ In light of the current studies and data available it is evident that Uttar Pradesh still continues as one of the extremely backward State of India.

Historically speaking, considering the enormity and diversified nature of its size in terms of area, population, resources, people's needs and aspirations, the whole of Uttar Pradesh was, long back during first half the sixties, divided into five economic regions, following the major criterion of homogeneity. These regions consisted of: (i) the Western; (ii) the Central; (iii) the Eastern; (iv) the Bundelkhand; and (v) the Hills. However, after a long journey of planned development program, enormity of the State was marginally scaled down in the Nov. 2000, when whole Hill region including some portion of the Plains was separated from Uttar Pradesh to carve out the new State of Uttaranchal. Since then, the re-organised State of U.P. has been

confining to only four economic regions of the Western, the Central, the Bundelkhand and the Eastern, which are, at present, constituted respectively by 26, 10, 7 and

27 districts⁵. The names of the districts falling in each of the economic regions are given below in the tabular form.

**TABLE 1:
REGION-WISE
CLASSIFICATION
OF DISTRICTS
IN UTTAR
PRADESH**

Sl. No.	Economic Regions	Number of Districts	Names of Districts
A	B	C	D
1	Western	26	1. Saharanpur 2. Muzaffarnagar 3. Meerut 4. Ghaziabad 5. Rampur 6. Bijnore 7. Moradabad 8. Bulandshahar 9. Aligarh 10. Mathura 11. Agra 12. Ferozabad 13. Etah 14. Mainpuri 15. Badaun 16. Bareilly 17. Pilibhit 18. Shahjahanpur 19. Farrukhabad 20. Etawah 21. J.P. Nagar 22. Baghpat 23. G.B. Nagar 24. M.M. Nagar 25. Kannauj 26. Auraiya
2.	Central	10	1. Lakhimpur Kheri 2. Sitapur 3. Hardoi 4. Unnao 5. Lucknow 6. Rae Bareli 7. Kanpur (D) 8. Kanpur (N) 9. Fatehpur 10. Barabanki
3.	Bundelkhand	7	1. Jhansi 2. Lalitpur 3. Jalaun 4. Hamirpur 5. Mahoba 6. Banda 7. Chitrakoot
4.	Eastern	27	1. Pratapgarh 2. Allahabad 3. Bahraich 4. Gonda 10. Basti 11. Gorakhpur 12. Kushi 19. Varanasi 20. Ghazipur 21. Mirzapur 22.

			5. Faizabad Nagar 6. Ambedkar Nagar 7. Sultanpur 8. Siddharth Nagar 9. Maharajganj	13. Deoria 14. Mau 15. 16. Jaunpur 17. Ballia 18. Sant R.D. Nagar	Sonebhadra 23. Kaushambhi 24. Shrawasti 25. Balrampur 26. Sant Kabir Nagar 27. Chandauli
	U.P.: Combined	70			

Source: *Statistical Diary, Uttar Pradesh, 2002, Economics and Statistics Division, State Planning Institute, Lucknow.*

In order to achieve the targeted economic growth of 8 percent for GDP and an ambitious 10 percent of growth rate, a target of 11.5 percent growth rate in manufacturing has been fixed for Eleventh Five Year Plan in Uttar Pradesh. The Ninth Five Year Plan had seen a negative growth rate of -4.3 percent in the industry sector. The tenth Five Year Plan has put the industrial growth back on the track. It witnessed the industrial growth of 7.3 percent. However the pattern of investment in the Heavy and medium industry in Uttar Pradesh is skewed heavily towards the western region where since August 1991 till March 2006 74.6 % of investment have been in Western region, 13.6 % in Central Uttar Pradesh while 9.9 percent and 1.9 percent in Eastern and Bundelkhand region respectively. Also majorly the allocation is also clustered not only on the regional basis but also within few industry groups only say Food processing, Textile, Metal, chemical and Miscellaneous industries. The investment indicates the disparity in the spread of industries across the State. The Government of Uttar Pradesh has been aiming policies to attract investment in the industry sector for balanced growth. In the tenth plan it has provided 10% capital subsidy, 50% exemption of stamp fee for new Heavy and medium industries and 50% rebate in the registration fees for

industries coming up in Eastern region and Bundelkhand.⁶

Under the circumstances it becomes necessary to evaluate the momentum of industrial investment pattern in Uttar Pradesh. Some of the parameters of the evaluation of the industrial agglomeration are on the basis of the level of employment generated in the industry, output value added, number of units, etc. They all seem to be primitive and simple to relate the extent of industrial concentration. But somehow all these parameters fail to justify the extent of private initiative in terms of the force of investment intention required in a particular sector in a region. The output value added does not define the pattern of concentration of the industries at the regional or state level, while employment and productivity are affected by the shift factors across sectors⁷. Also except number of units all these are the output function of the infused efforts of the general confidence in terms of the commitment of the financial resources. Therefore one of the many parameters of evaluating the agglomeration of industries is Investment as a fixed capital. The pattern of investment in the industrial sector of Uttar Pradesh would provide an insight to the policy makers in terms of the kind of industries to promote as per the inclination of the investment in the post

reform period where the economy is more of market and capital driven.

THE RESEARCH METHODOLOGY

The objective was to analyse the pattern of investment in the regions of Uttar Pradesh over the specified period of 1997 and 2007 that may describe the status of industrial investment in the post reform period. Since the study is in reference to the reorganised state of Uttar Pradesh during post reform period, the data of districts/zones of Uttaranchal and Hill regions in 1997 have been excluded, from the study. The data of investment in the Heavy Industries of the various industry groups (NIC group 2 digits codes) has been collected for all the four regions of Uttar Pradesh, for the years of 1997 and 2007 as per the five year plans of Uttar Pradesh.

It was a challenge to identify the concentration of the industries in the various regions of different size and structure. The regions of Uttar Pradesh are split in the number of non homogeneous zones and districts. Therefore the choice of one method to identify the pattern of industrial investment was to measure the regional concentration of the industrial investment was a major issue. One index that could be used to make comparison across the regions for the level and status of investment concentration in various industries in Uttar Pradesh was Balassa Index. Therefore the Balassa index for all the sectors of the industry over the two time periods i.e. 1997 and 2007 was calculated. This provided the degree of specialization of various industries on the basis of the investment made into them.

The Balassa index has been extensively used in the international trade literature for cross-country comparisons, giving an indication whether a country's

exports are more specialised in some category of goods than the world as a whole⁸. The index was used first by Leisner (1958)⁹ to reveal the comparative advantage in British industry but it was extensively used by Balassa B (1965;1989) to drive out the share and concentration of export of various countries for the particular industry¹⁰. Michael Porter (1979) has used the Balassa index to define the structure of industries and evaluate the comparative performance of the companies.¹¹ The Balassa index has been used to show the relative spatialisation of firms belonging to the same industry on the basis of the investment made in the various heavy industries. The Balassa for each industry group here is calculated as:

$$B_{ij} = [C_{ij} / \sum_j C_{ij}] \div [\sum C_{ij} / \sum_i \sum_j C_{ij}]$$

Here B_{ij} is the Balassa index, and C is the fixed capital investment in the industry i and region j . The bigger the corresponding Balassa index is the more concentrated the industrial investment will be.

ANALYSIS & DISCUSSION

The level of investment in Uttar Pradesh is highly skewed in the Western region and the growth of investment is also skewed in western region only, followed by Eastern region. (Table 2) The percentage of gross investment in Uttar Pradesh is concentrated in the Western region with a marginal improvement in the investment attraction. The Eastern region also reflects a marginal improvement in terms of the industrial investment over the period. Also one can see that the concentration of heavy industry investment has been insignificant in the Bundelkhand Region as well as the Central region. The Central region has been leader in terms of the industrial conglomeration in initial five year plan periods. The

decrease in the participation of the central region in terms of the attraction of the investment in the region is alarming in

terms of the growth indications for the region. The technological improvements in the region have perhaps taken a back seat.

TABLE 2: REGION WISE CHANGE IN INVESTMENT PATTERN OF INDUSTRIES IN UTTAR PRADESH DURING 1997-2007

(Investment in Crores of Rupees)

Year		1997	2007
Sr. No.	Region		
A	B	C	D
1	Western Region	7799.01 (57.46)	9822.61 (59.04)
2	Central Region	1927.26 (14.20)	2040.18 (12.26)
3	Eastern Region	3579.12 (26.37)	4506.18 (27.09)
4	Bundelkhand Region	267.1 (1.97)	267.16 (1.61)
5	All UP	13572.49	16636.13

Source: Directorate of Industries, Uttar Pradesh, Kanpur, Gov. of UP, Figures in parenthesis are the percentage of the total

The pattern of investment with reference to the Balassa index, over the period of 1997 to 2007 does not reflect a very significant change at the regional level during the post reform. (Refer Table 2). The investment attraction in the industrial sector of Uttar Pradesh has not seen any improvement in last ten years which have been marked as the crucial period in terms of the economic restructuring. Also Industry group wise we find that the western region has a higher agglomeration of investment in Heavy Industry of Beverages, Tobacco & Tobacco Product, Wood Product, Paper Product, Rubber and Plastic products, Machinery & Part except Electrical, Chemical & Chemical Products in both end of 1997 and 2007. (Ref Table 3) Based on the balassa index we can see that there is a marked shift of investment agglomeration

in Hosiery and Garments from Central region (1.72) in 1997 to Western region in 2007 (1.47). However since both the values are above one and deviation is marginally less therefore we may ignore the magnitude of shift. The Central region shows a higher concentration within eight industry groups in 1997 and six in 2007. It reflects the higher concentration in Food industry, Cotton and textile, Wool, Silk, and Synthetic Fibre Textile, Jute, Hemp and Mesta textile, Leather Products and Transport equipments. The surge of investment has ceased in the central region in the heavy industry and has also concentrated more towards more consumer goods industry sector.

The Eastern region has the higher concentration of Metal Products, Electrical machinery & Apparatus and Repairing &

Servicing Industries. This must be noted that in all the three industries the investment concentration in Eastern Uttar Pradesh has decreased from 1997 to 2007 such as Metal Products 2.99 in 1997 to 2.57 in 2007, Electrical machinery & Apparatus 1.86 in 1997 to 1.79 in 2007 and for Repairing & Servicing Industries 2.69 to 2.58.

Also the Repairing and Servicing industry has a larger concentration in Bundelkhand in both the years. Bundelkhand region has improved upon its

concentration in Non-Metallic Mineral Products of 6.71 in 1997 to 7.31 in 2007 and Basic Metal Industries of 2.20 in 1997 to 3.21 in 2007. However the huge index of the Balassa also indicates that the concentration of investment in the Bundelkhand region is skewed only in the industry of Repairing and Services as well as that of Non-Metalic and Metal products in comparison to other NIC two digit code industries.. One may not ignore that during 1997-2007 Bundelkhand region is attracting investment in the HI of Cotton and textile industry (Refer table 3).

TABLE 3: THE BALASSA INDEX OF THE INVESTMENT IN HEAVY INDUSTRIES IN THE REGIONS OF UTTAR PRADESH FROM 1997-2007

	Regions----	Western Region	Central Region	Bundelkhand Region	Eastern Region	Western Region	Central Region	Bundelkhand Region	Eastern Region
NIC Group	Industries\ Year	1997	2007						
A	B	C	D	E	F	G	H	I	J
20-21	Food Products	1.14	1.24	0.50	0.64	0.88	1.29	0.41	1.18
22	Beverages, Tobacco & Tobacco Product	1.17	0.95	0.00	0.75	1.38	0.62	0.00	0.42
23	Cotton Textiles	0.61	3.30	3.04	0.60	0.61	3.74	3.66	0.58
24	Wool, Silk & Synthetic Fibre Textile	0.91	1.50	0.00	1.03	0.66	2.18	0.00	1.29
25	Jute, Hemp & Mesta Textiles	0.45	5.53	0.00	0.10	0.30	4.29	0.00	1.21
26	Hosiery & Garments	1.03	1.72	0.00	0.67	1.47	0.66	0.00	0.22
27	Wood Products	1.60	0.69	0.00	0.00	1.61	0.50	0.00	0.00
28	Paper Products & Printing	1.37	0.87	0.48	0.34	1.58	0.31	0.18	0.11
29	Leather Products	0.14	5.69	0.00	0.67	0.13	6.55	0.00	0.66

30	Rubber & Plastic Products	1.71	0.11	0.04	0.04	1.55	0.12	0.04	0.26
31	Chemical & Chemical Products	1.09	0.76	0.89	0.94	1.03	0.79	0.98	1.02
32	Non-Metallic Mineral Products	0.75	0.45	6.71	1.36	0.84	0.46	7.31	1.19
33	Basic Metal Industries	0.48	0.45	2.58	2.20	0.45	0.55	3.21	2.19
34	Metal Products	0.22	0.16	0.77	2.99	0.40	0.17	0.82	2.57
35	Machinery & Part Except Electrical	1.22	0.97	0.00	0.63	1.34	0.79	0.00	0.44
36	Electrical machinery & Apparatus	0.60	0.94	0.94	1.86	0.64	1.02	1.09	1.73
37	Transport Equipments & Parts	1.29	1.70	0.74	0.10	1.32	1.66	0.77	0.08
38	Miscellaneous MFG.	1.19	2.03	0.75	0.15	1.47	1.04	0.37	0.06
96-97	Repairing & Servicing Industries	0.08	0.00	10.36	2.69	0.12	0.00	12.33	2.58

Source: Self calculations based on investment data made available by Directorate of Industries, Kanpur, Govt. of Uttar Pradesh

The level of investment as such did not improve drastically and the regional pattern does not show a large variation in the investment in Heavy Industries in Uttar Pradesh where Bundelkhand still remains to be industrially ignored as industrially backward region and most of the concentration of investment is attracted by the Western and Eastern region in the Heavy industry.

CONCLUSION

Over the period we do not witness a spurt of investment change in the heavy industries of the state of Uttar Pradesh in India. On the basis of balassa index we can estimate the direction of investment in the region, though the current analysis does indicate that the level of investment in the

heavy industries in Uttar Pradesh had been stationary over the two decades and till date apart from the Western region and part of the Central Uttar Pradesh has seen the shift of investment in the last two decades after the reforms.

The analysis can provide an insight to the policy makers in designing the policies to induce the investment in the regions with reference to the various industries. The index reflects the inherent choice of the entrepreneurs as well as the government, regarding the investment in the kind of industries, in the four regions of the State. The government may further explore new avenues for inducing the investment in the backward regions in various industries. The policy for driving the entrepreneurial investment in the small scale sector, as a

forward and backward linkage to the Industries of choice in a region can be derived on the basis the analysis.

However the balassa index may not provide a complete insight to the choice of industrial investment and the factors related to it. The index needs to be verified for the extent of entrepreneurial activity both as a commitment of public as well as the private expenditure at the district level. The further inquiry with respect to the gross output produce and the employment generation capacity also needs to be explored. The balassa index above does provides the standardised view of the investment at a point of time for a specified industry sector in a region. It gives the direction of industrial growth and with a comprehensive analysis this may be the initial step to explore the linkages of industrial agglomeration at the various administrative levels of the state and further strategise in terms of the strengthening the development of various industry sectors in the state at local level.

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