Chronic problems in industrialization in West Bengal

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Abstract

In this paper, the status of West Bengal in manufacturing sector has been studied to search the most pertinent question in today's socio-political arena that is 'whether West Bengal is congenitally weak in industrialisation ?', ' how efficient is the manufacturing sector of West Bengal', and ' what are the deterrent factors to growth in the manufacturing sector' ?' In the study, the data of both organised and unorganized manufacturing sector, based on ASI and NSS, have been considered in assessing the overgrowing unorganized sector with its inherent weakness in West Bengal. The parameters like size, structure, employment potential, value addition, capital formation and compensation to employees have been analysed with time-series data over last thirty years and also over three distinct political periods 1972-1977, 1978-2011 and finally 2011-2012. It is also examined whether the focus on small manufacturing sector can at all be the engine for economic growth and employment generation in West Bengal. The State Gujarat has always been ranked as one of the topmost industrialized State in the country and therefore, the paper has also attempted to compare the efficiencies of the organized manufacturing sector between Gujarat and West Bengal through production function analysis using FRONTIER Version 4.1. All such analyses finally indicate the chronic problems in the growth of manufacturing sector in West Bengal.

Introduction

Over the last two decades, India has emerged as one of the fastest growing economies in the world. Manufacturing sector played an important role in this achievement. This sector contributes around 15.0% of GDP and provides almost 12.6% of total employment in India. India has also achieved significant progress in gaining higher productivity and efficiency in use of material and energy resources.

However, unlike in many other economies, the growth of manufacturing has been overtaken by service activities in India. A UNIDO study on patterns of industrial growth has shown that the contribution of manufacturing sector to GDP does not increase beyond a certain point when the country reaches the highest level of industrialization. GDP per capita at this point has been estimated at international dollar (PPP) 13000[1] which corresponds to the high-income category of countries according to the World Bank definition. The share of manufacturing value added (MVA) in GDP at this stage has more or less been around twenty percent with respect to the high-income category of countries. India has not reached this level by

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[1] In Search of General Patterns of Manufacturing Development; Working paper by Haraguchi & Rezonja; UNIDO, 2010

either indicator, but the country has witnessed oscillations in contribution of manufacturing sector in GDP at a median of about fifteen percent. At the same time the contribution of the service activities has reached 62.5 percent of GDP. It has led many to believe that India has missed the growth of manufacturing.

In order to create a paradigm shift in the manufacturing, the Government of India has introduced the National Manufacturing Policy in 2011. The main objectives of this policy includes: i) accelerate manufacturing growth to 12.0 to 14.0 percent over the medium term, ii) increase the contribution of manufacturing to GDP to at least 25.0 percent by 2025, iii) create 100 million additional jobs in manufacturing by 2025, iv) increase 'depth' in manufacturing, with focus on the level of domestic value addition to address the national strategic requirements, (iv) enhance global competitiveness of Indian manufacturing through appropriate policy support and (v) ensure sustainability of growth, particularly with regard to the environment.

The smaller manufacturers comprising of the micro, small and medium enterprises (MSME) have played a crucial role in providing large employment opportunities at a comparatively lower capital cost and land requirement. However, the small manufacturers are facing many problems related to high production costs, poor infrastructure and low level of technological endowment. In an environment of intense global competition smaller manufacturers must find ways to achieve greater efficiency and speed in the product development process.

In this context, of late, the economy of West Bengal, has become a focus point for various socio-political reasons. The economy of West Bengal, is primarily dependent on agriculture and medium-sized industry. The new political power in the State after thirty four years rule of communist government has drawn various expectations one of which is industrialisation. But, the growth of industry and opening of new industries depend on various factors.

Current perspective

The current pace of the growth of manufacturing in West Bengal poses some serious questions to policy makers. Has manufacturing really lost the momentum in West Bengal? To understand the major issues of manufacturing growth and structure in its length and depth, it is necessary to analyse the performance of entire manufacturing sector of West Bengal on the basis of reliable empirical evidences over last thirty years and also over three distinct political periods 1972-1977, 1978-2011 and finally 2011-2012. The State of Gujarat, though not a topper in industrialization, is often considered as a role model for promoting industry. Therefore, comparability with Gujarat in terms of technical efficiency has

also been attempted. This paper has made an attempt to bring the major statistics together and present some analysis on industrial scenario of West Bengal.

Data collection

On the basis of major data sources, manufacturing sector of West Bengal has been stratified into two mutually exclusive and collectively exhaustive strata viz. small and large. The small sector covers the manufacturing units which employs up to nine person, and the large sector covers those units employing 10 or more persons. These sectors are covered by two separate data collection programmes of the Government of India namely; Annual Survey of Industries (ASI) and Quinquennial survey of Unorganized Manufacturing Sector (UMS) and data are published in two separate reports. However, there is no official publication available that presents the statistics of entire manufacturing sector of India covering its structure by industries and states for both organised and unorganised sectors. This paper looks into the entire gamut of manufacturing sector through these two broad sectors, analyzing their comparative structures, growth, productivity and efficiency for the country as a whole and for West Bengal.

Data collection strategy

This study is based on two sets of data *viz.* Annual Survey of Industries (ASI) for registered manufacturing sector and National Sample Survey (NSS) data for unorganized manufacturing sector (UMS). ASI is basically the organized sector. However, in field, it is seen that there are some factories that are still not registered with the CIF even when they have 10 or more workers and use electricity as motive power, owing to various administrative reasons. So, if we consider ASI factories as 'large', there is a possibility that some large factories will be missed from the ASI sector for not being registered with CIF. In the study, we have taken the organised sector of manufacturing industries, that is, ASI sector as large. Moreover, factories with employment size 10 or more, but not covered in ASI, are also categorised as large. Such factories are available in NSS surveys. However, there are cases of reporting employment size below 10 in actual field survey in ASI factories but for all practical purposes they remain in ASI Frame, based on their initial registration status with CIF. Therefore, in this study, we have kept such factories with ASI for defining large industries without any loss of generality.

Thus, for the purpose of statistical data collection, the domain of the entire manufacturing sector is divided into two broad strata *viz.* Organized ASI sector and Unorganized non-ASI sector. Each category is expected to be mutually exclusive and collectively exhaustive. There are two different government surveys to estimate the contribution etc. of each sector through different statistical methodologies and time-frame. There are:

i) Annual Survey of Industries (ASI) for the registered sector conducted by Central Statistics Office(CSO), Govt. of India and

ii) Five-Yearly Unorganized Manufacturing Survey [UMS] for the rest [non-ASI sector] conducted by NSSO, Govt. of India.

Keeping this in view, the NSS estimates on non-ASI manufacturing sector are re-calculated making two different strata *viz.* small and large based on employment size criterion. In UMS, basically the area-frame is used and survey is conducted on household approach. The domain, is being entire non-ASI sector, if a large factory is not registered with the CIF and thus not covered in ASI, and then the same is included in the domain of unorganized survey of manufacturing sector.

Therefore, in the present study, we have taken all such large factory units in one sector considering both the estimates of ASI data and estimates of all such units with 10 or more employment size but appearing in UMS sector, making a class called ASI (+). Accordingly, the rest of UMS is declared as 'small' with 9 or less employment size and is termed as UMS (-). From the unit level data of NSS, separate estimates have been made for those manufacturing units where number of workers is 10 or more assuming those as ASI equivalent and therefore, 'large'. In UMS (-) stratum, a separate sub-stratum has been made for 'Own Account Enterprises'. An enterprise, which is run without any hired worker employed on a fairly regular basis, is termed as an own account enterprise. This sector may be considered as smallest category of manufacturing sector. For the purpose of study, two sets of estimates will be considered- (i) ASI+ as Large: where ASI estimates and estimates for all such units in UMS with 10+ employees will be taken and (ii) UMS (-) as Small: where UMS estimates will be taken with 9 or less employees.

In this study, we define 'small' as those units with 9 or less employees. The term used in India for Micro-Small-Medium Scale Industry in India, based on original invested capital in Plant and Machinery, may not be confused with the term 'Small'. Though ASI provides annual data, there is no annual source of data for UMS. NSS, after every five years, conducts a survey of all types of enterprises where manufacturing is also covered. UMS has been conducted in the 56th (year: 2000-2001), 62nd (year: 2005-2006) and 67th (year: 2010-2011) NSS rounds from the year 2000 onwards. In the present study, these three years have been considered as three referral time-period for obtaining statistical data. Unit level data in NSS and ASI are used for the study. The UMS data have been culled out from the NSS unit level data where manufacturing is a major activity and estimates are generated for small and large sectors.

The nominal value figures in the time series data have been converted to the real values by using wholesale price index (WPI) at constant price 1999-00.

Findings and discussion
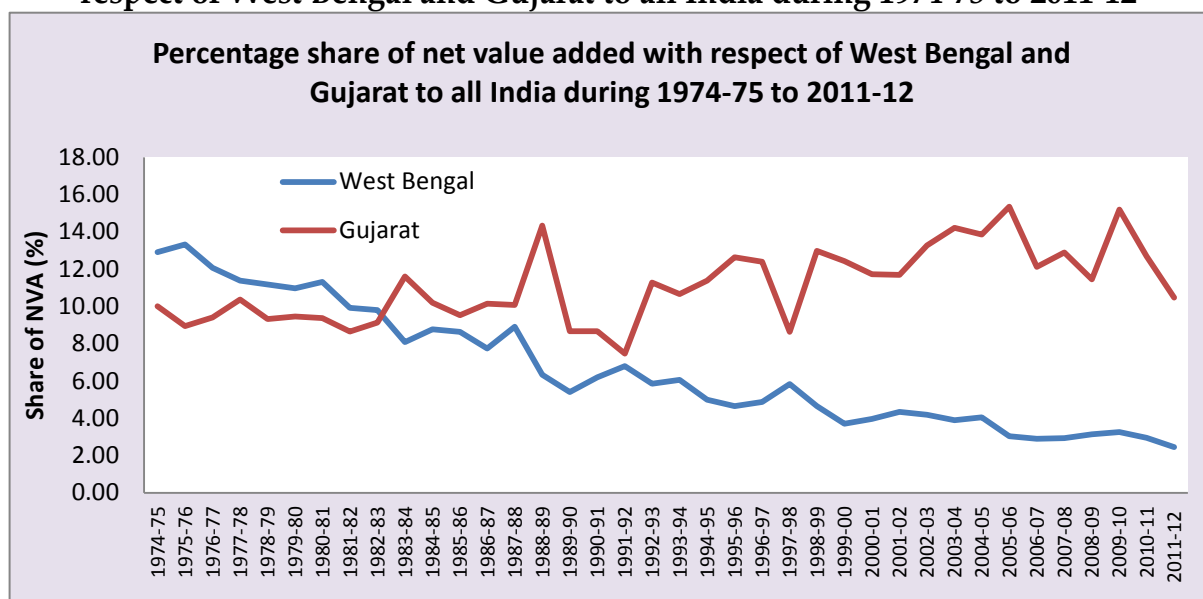
Organised Manufacturing Sector

The growth of registered manufacturing sector in West Bengal since the last thirty years has been almost flat in terms of number of factories. Though Gujarat and West Bengal were almost at the same mark in 1974, Gujarat has gone far above West Bengal. The size growth was almost negligible upto 2011 with the first noticeable upward movement in the year 2012 (Figure 1).

Figure 1
Number of factories in organised manufacturing sector during 1974-75 to 2011-12.
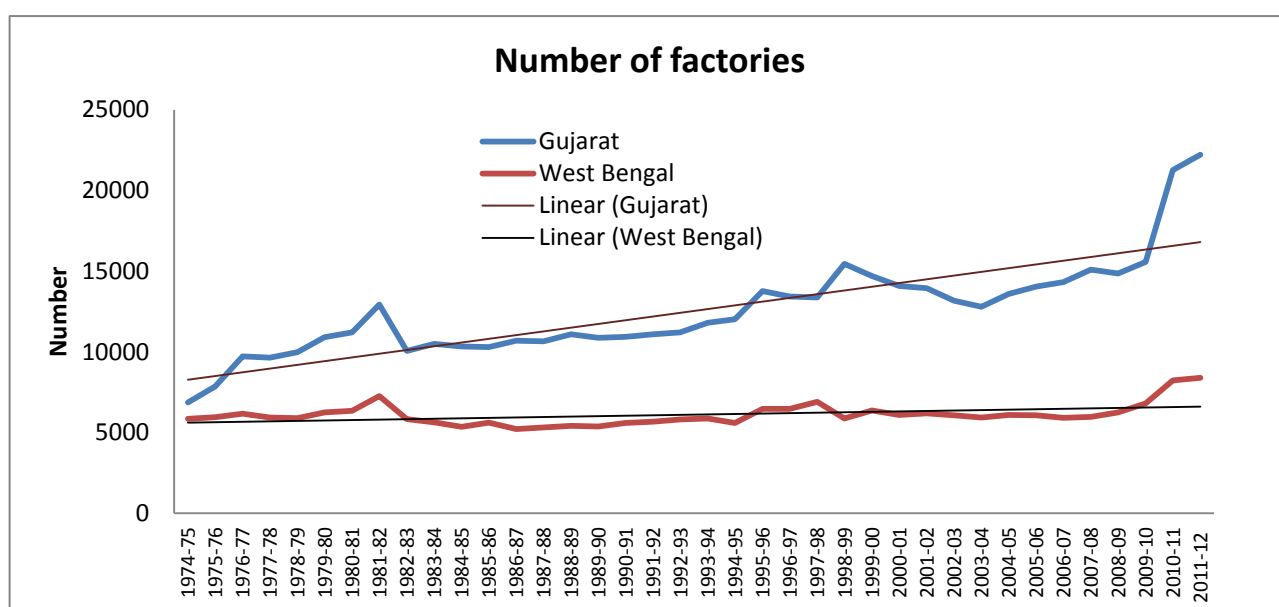
The all India share of NVA of West Bengal in organised manufacturing sector was higher than that of Gujarat in the year 1974 but gradually fell much below Gujarat over last 30 years. The fall started from the year 1982 (Figure 2).

Figure 2
Percentage share of net value added in organised manufacturing sector with respect of West Bengal and Gujarat to all India during 1974-75 to 2011-12

Percentage share of net value added with respect of West Bengal and Gujarat to all India during 1974-75 to 2011-12

## Productivity in organised manufacturing sector over three past distinct political rules

Labour Productivity is defined as gross value added per employee in an industry. When three distinct political periods are considered, then the comparative fall in labour productivity is noted in case of West Bengal. In early '70s, they were almost equal. The gap has been widened over time after the year 1977.

Figure 3
Labour productivity in organised manufacturing sector over three distinct political rules

Comparative Labour productivity in '000 Rs.
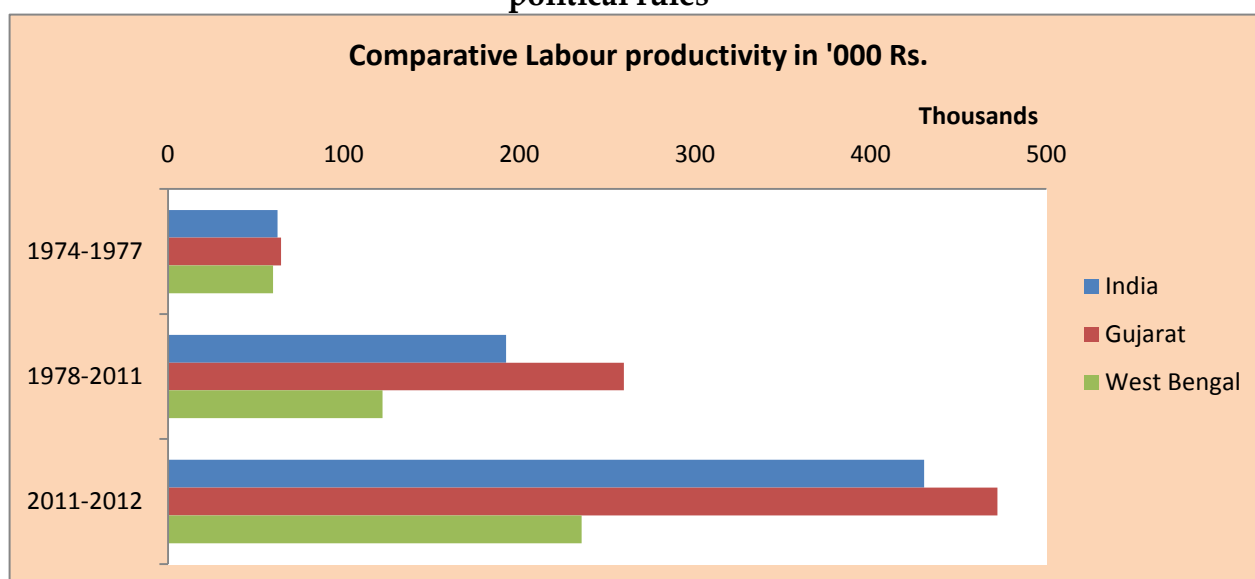
The picture becomes critical when Capital productivity, defined as gross value added per unit of fixed capital, shows the superior position of West Bengal in the period 1974-1977, much higher than Gujarat and all India position. The gap has been reduced to a large extent over last three decades.

Figure 4
Capital productivity in organised manufacturing sector over three distinct political rules
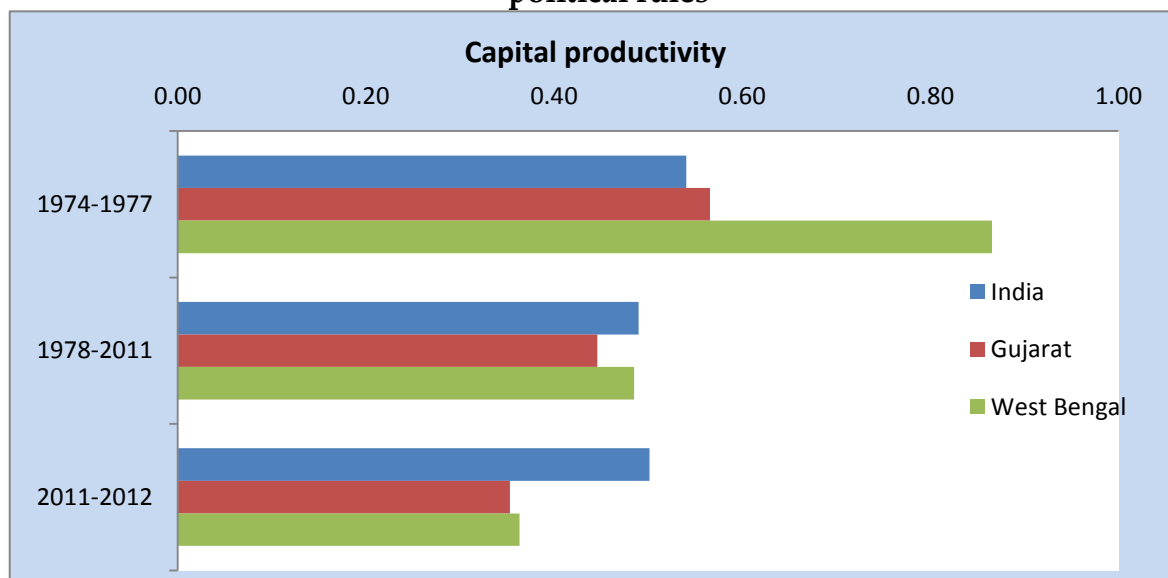

The value addition per factory was also higher than that of Gujarat and all India during 1974-1977. The comparative fall has been noticed during 1978-2011 when Gujarat overtook West Bengal.

Figure 5
Value addition per factory in organised manufacturing sector over three distinct political rules
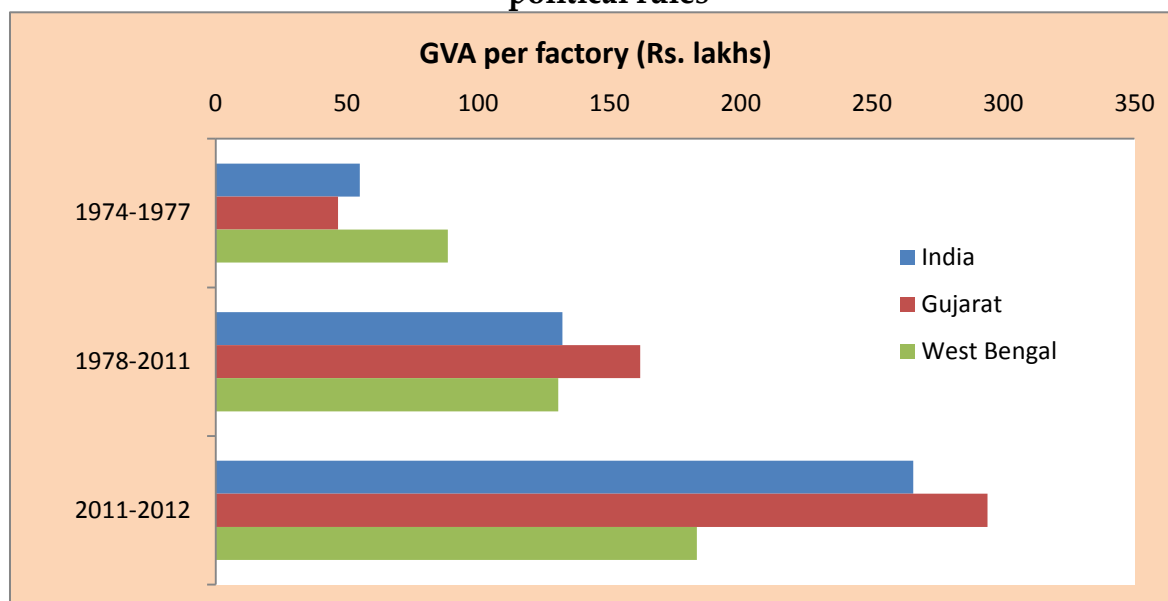
The wage per employee was the highest in West Bengal in comparison to Gujarat and all India with noticeable margin in the year 1974-1977. But during next 34 years, the gap between State averages has been reduced considerably and finally fell much below Gujarat and all India in the year 2011-2012.

Figure 6
Wage rate in organised manufacturing sector over three distinct political rules
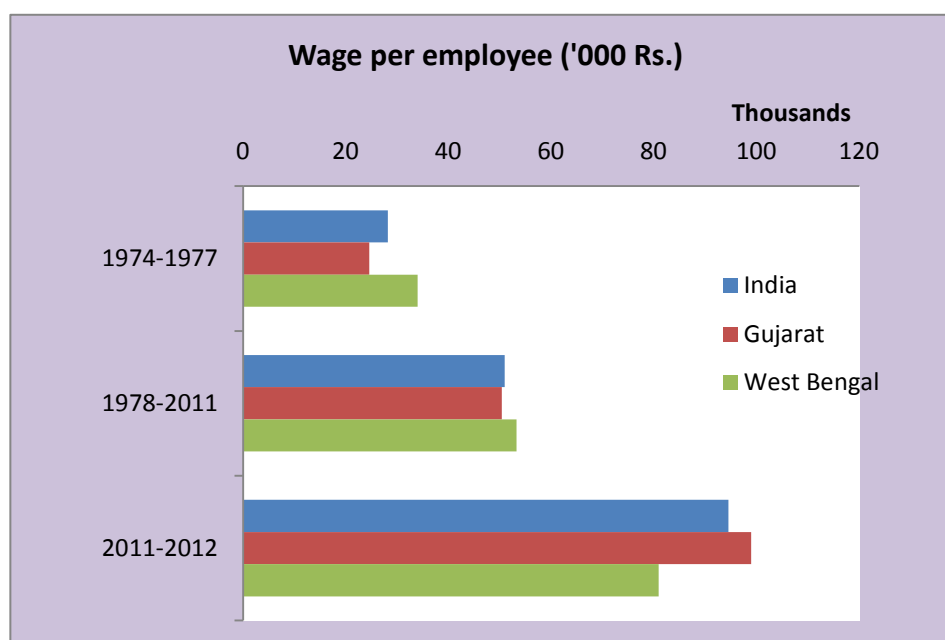
Higher proportions of manufacturing units in organised sector are working with less than twenty employees. It has also observed that significantly higher proportions of units in Gujarat where employment size is less than twenty in comparison to West Bengal (Table 1).

Table 1
Percentage share of manufacturing units in organised sector by employment size class during 2001 and 2011

Employment size class	West Bengal		Gujarat	
	2001	**2011**	**2001**	**2011**
Up to 19	50.17	52.36	57.44	60.30
20-49	26.30	22.72	22.37	17.59
50-99	11.38	10.88	10.02	9.62
100-499	9.00	10.86	8.51	9.93
500 and above	3.15	3.18	1.65	2.55
Total	100.00	100.00	100.00	100.00

In West Bengal, the Food beverage constitutes the highest proportion around 20% followed by Basic Metal industry in the year 2011. But, all the industries except wearing apparel are operating in the lowest employment range.

Table 2
Number of manufacturing units of the organised sector with respect to West Bengal by employment size class, 2011

Manufacturing Activity	Employment Size Class					
	Up to 19	20-49	50-99	100-499	500 and above	Total
Cotton ginning	7	-	-	-	-	7
Food and beverages	607	527	177	178	47	1536
Tobacco products	556	20	12	43	11	642
Manufacture of textiles	203	50	50	46	64	413
Wearing apparel	23	28	28	23	4	106
Leather products	213	169	38	80	4	504
Wood products	174	16	16	8	2	216
Paper products	100	44	33	9	2	188
Printing, recorded media	106	42	10	22	6	186
Coke and refinery	37	12	13	19	4	85
Chemicals and pharmaceutical products	280	98	25	54	15	472
Rubber and plastic products	288	56	40	18	1	403
Non-metallic mineral products	110	106	46	18	6	286
Basic metals	398	124	92	145	49	808
Fabricated metal products	260	146	59	43	13	521
Computer and electronic products	24	6	7	9	5	51
Electrical equipment	192	95	37	48	6	378
General purpose machinery	305	84	68	58	7	522
Motor vehicles	42	11	3	1	1	58
Other transport equipment	47	48	12	15	14	136
Furniture and other manufacturing	53	28	11	16	-	108
Recycling	1		1	1	-	3
Others	283	159	118	41	1	602
All manufacturing	**4309**	**1869**	**896**	**895**	**262**	**8231**

In Gujarat, he highest concentration is in Chemical industries followed by textiles industries. Though highest numbers of factory belong to the lowest employment strata in Gujarat also but there are good numbers of factories in higher employment classes also.

Table 3
Number of manufacturing units of the organised sector with respect to Gujarat by employment size class, 2011

Manufacturing Activity	Employment Size Class					Total
	Up to 19	20-49	50-99	100-499	500 and above	
Cotton ginning	357	229	79	21	1	687
Food and beverages	1239	390	107	157	63	1956
Tobacco products	161	32	20	4	1	218
Manufacture of textiles	1318	368	270	492	90	2538
Wearing apparel	193	43	13	39	2	290
Leather products	7	3		2		12
Wood products	378	47	20	25	3	473
Paper products	363	162	44	75	9	653
Printing, recorded media	200	43	30	5	1	279
Coke and refinery	69	21	11	24	8	133
Chemicals and pharmaceutical products	1497	417	332	341	103	2690
Rubber and plastic products	771	185	111	101	11	1179
Non-metallic mineral products	1343	399	265	227	43	2277
Basic metals	972	275	113	75	41	1476
Fabricated metal products	1267	236	96	106	18	1723
Computer and electronic products	98	26	16	9	5	154
Electrical equipment	378	190	17	63	16	664
General purpose machinery	1421	413	268	177	50	2329
Motor vehicles	107	41	15	18	9	190
Other transport equipment	45	10	13	4	9	81
Furniture and other manufacturing	242	65	24	85	51	467
Recycling	8	17	51	3		79
Others	399	133	132	60	9	733
All manufacturing	**12833**	**3745**	**2047**	**2113**	**543**	**21281**

## Unorganised Manufacturing Sector

Now the position of the entire manufacturing sector considered both organised and unorganised needs to be studied to point out the specifically the domain of problem. The data show that (Table 4), owing to more number of unorganised manufacturing units in West Bengal, the total size of manufacturing sector is higher in West Bengal than that of Gujarat. Therefore further in depth analysis is required. For this purpose, four sub-domains have been constituted within the unorganised manufacturing sector, namely, large, small, OAE and total manufacturing. The data analyses have been done for the year 2001, 2006 and 2011 based on available NSS reports.

Table 4
Number of factories in manufacturing sector during 2000-01, 2005-06 and 2010-11

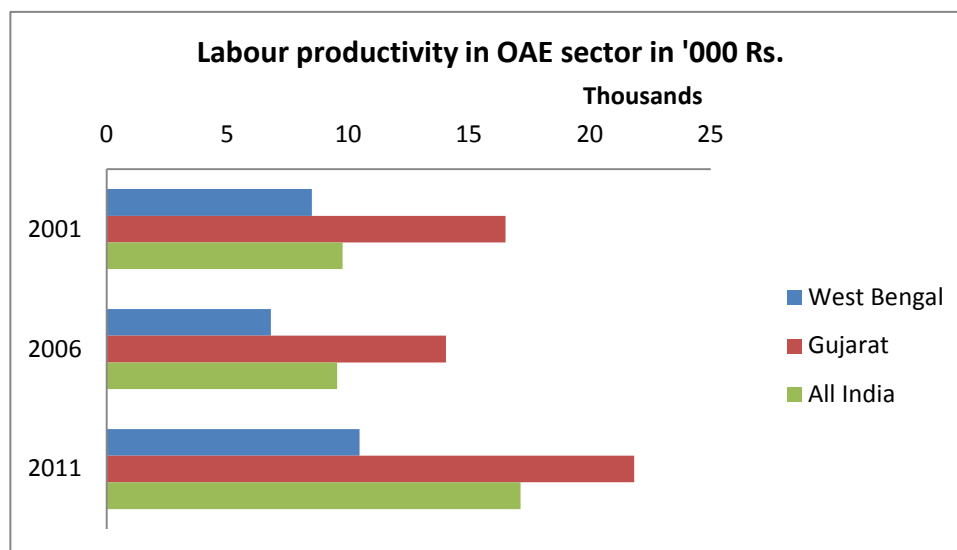| Year	Gujarat			West Bengal		
	Organised	Unorganised	Total Manufacturing	Organised	Unorganised	Total Manufacturing
2000-01	14090	542305	556395	6091	2771274	2777365
2005-06	14055	654358	668413	6077	2752793	2758870
2010-11	21282	1416655	1437937	8232	2764054	2772286

It is evident that (Figure 7) labour productivity is much lower in West Bengal than that of Gujarat and all India average in small unorganised sector. The gap has widened aver time.

Figure 7
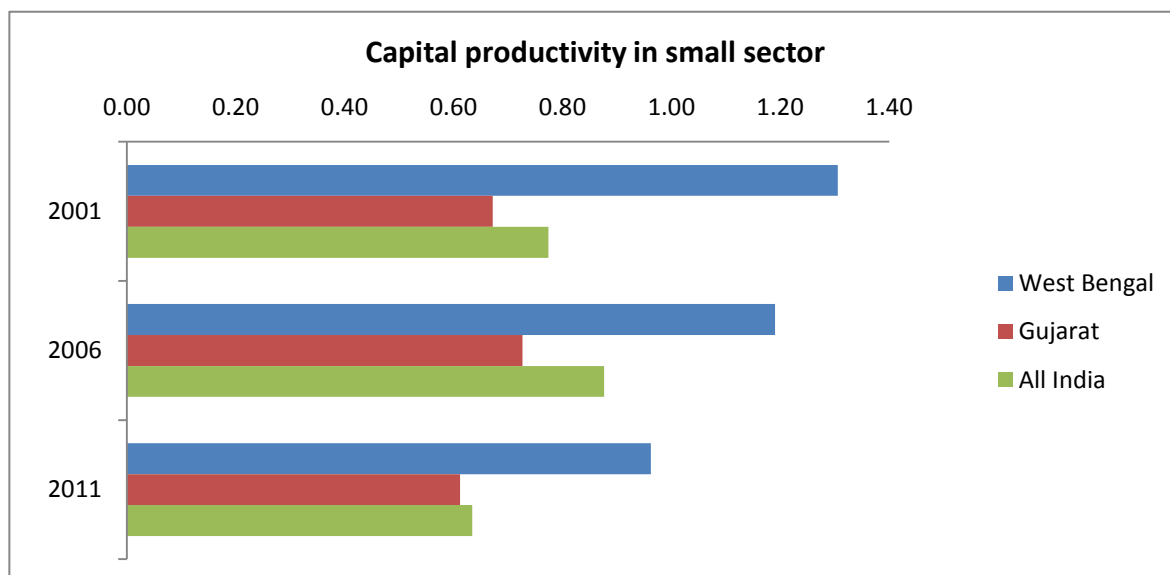**Labour productivity in unorganised sector (small)**
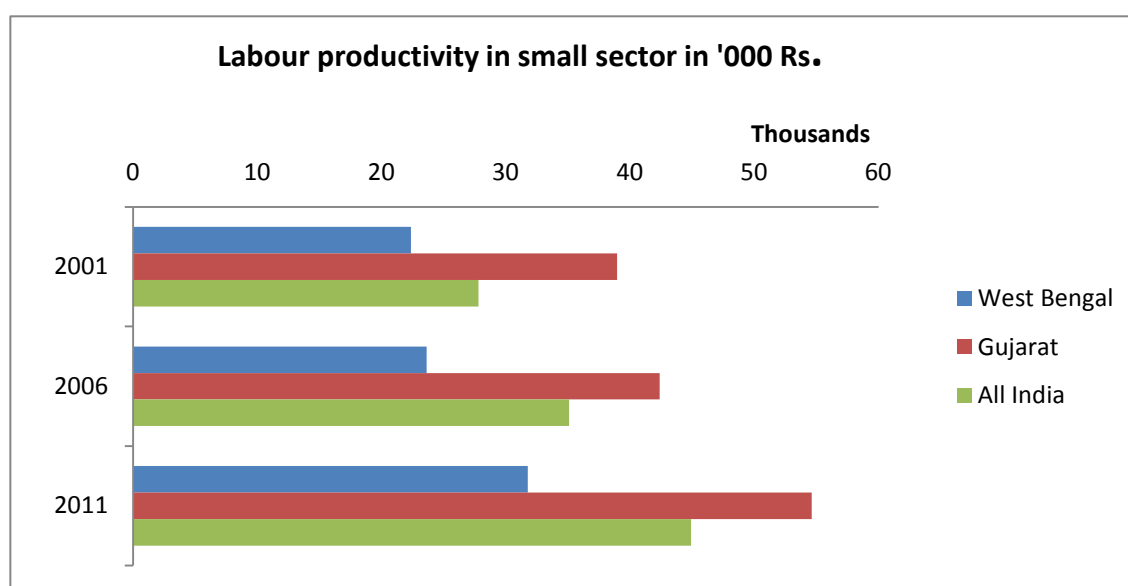
The picture is more pronounced in OAE sector. The total number of family units as on 2011 in West Bengal is around 2.4 million whereas in Gujarat it is around 1.2 million but the labour productivity in Gujarat was always higher since 2001.

Figure 8
**Labour productivity in unorganised sector (OAE)**

The picture is reverse and follows the pattern of organised sector in terms of capital productivity. Capital productivity in West Bengal is always significantly higher than that of Gujarat and also far above all India figure in both small and OAE sector.

Figure 9
**Capital productivity in unorganised sector (small)**

This means capital is more productive in West Bengal than labour.

Figure 10
Capital productivity in unorganised sector (OAE)

Capital productivity in OAE sector
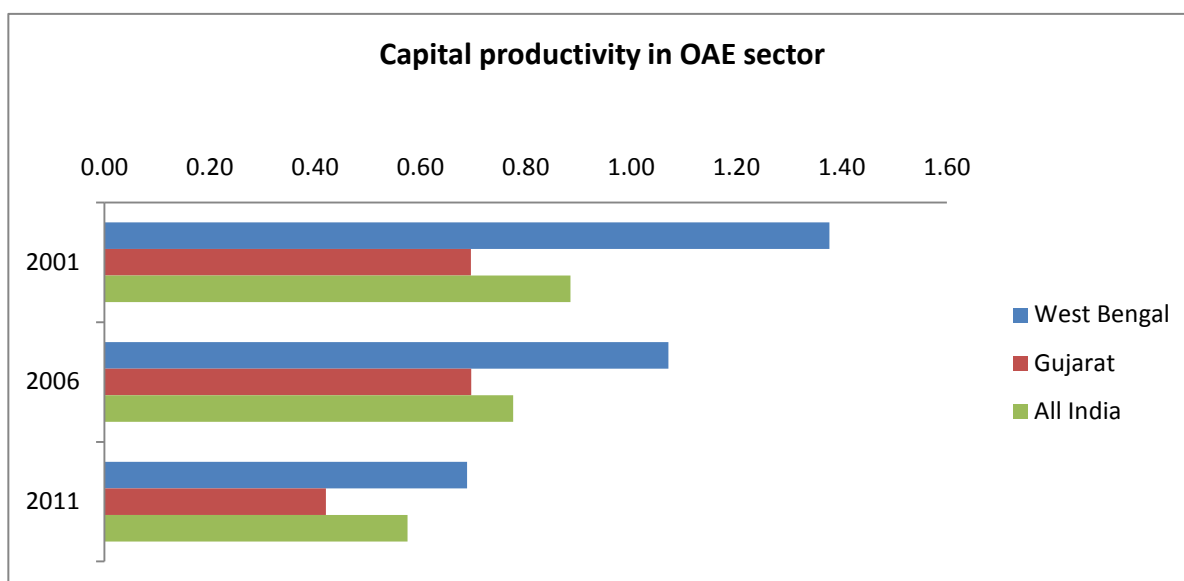

The value addition has always been higher in Gujarat than that of West Bengal in both organised and sub-domains of unorganised sectors. The small sectors as well as the OAE sectors are contributing per factory much higher GVA than that of West Bengal.

Figure 11
Value addition per factory in unorganised sector (small)

GVA per factory in small sector in Rs. lakhs
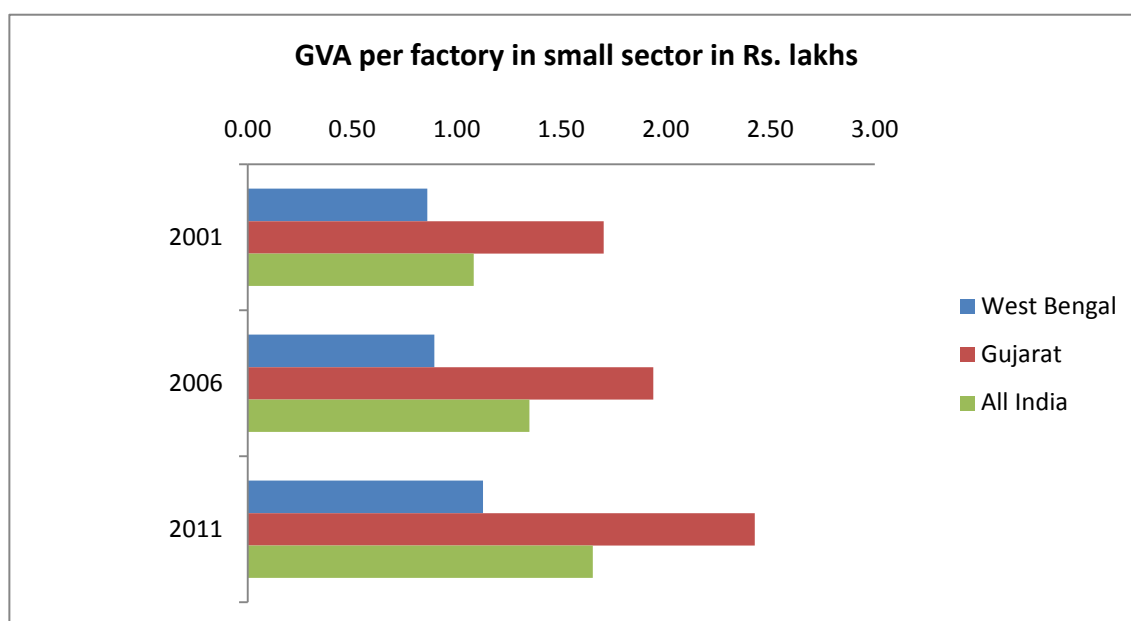
Thus, higher number of units does not necessarily mean the higher value addition in West Bengal when compared to Gujarat.

Figure 12
Value addition in unorganised sector (OAE)
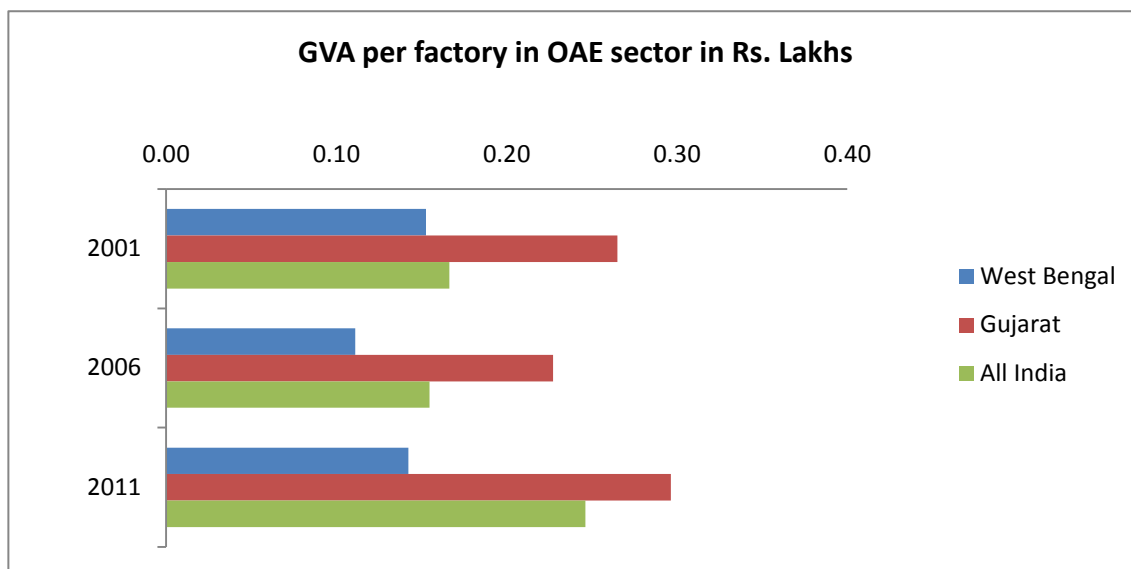
Now, after observing the descriptive statistics of Gujarat and West Bengal in manufacturing sector, it is now important to compare the technical efficiency of the two states in manufacturing sector. For the sake of data availability, the data of last 32 years have been considered to analyse the technical efficiency through stochastic frontier production function approach.

Stochastic Frontier production Function

The output growth in the manufacturing sector does not depend only on the labour and capital as input. Along with the factors of production technology is also playing a major contribution in the output growth. Therefore an attempt also made to estimate the technological efficiency in organised manufacturing sector with respect to West Bengal and Gujarat. The *Stochastic Frontier Production Function Approach* (SFA) has been used to estimate a production frontier and technical efficiency effects in the organised manufacturing sector. FRONTIER Version 4.1 has been used to estimate the technical efficiency during 1980-81 to 2011-12. Specially, a panel data following the Battese and Coelli (1995) specification, in which the technical efficiency is estimated from the stochastic frontier.

The Battese and Coelli (1995) model specification is expressed as:

$$Y_{it} = X_{it}\beta + (V_{it} - U_{it}) \qquad i = 1,2, \ldots\ldots.N, \ t = 1,2, \ldots\ldots\ldots T$$

where

Y_{it} is the production (or the logarithm of the production) of the ith State in the t-th time period;

X_{it} is a $K \times 1$ vector of (transformation of the) input quantities of the ith State t-th time period;

β is an vector of unknown parameters;

the V_{it} are random variables (not known) which are assumed to be iid $\sim N(0, \sigma_v^2)$ and independent of the

U_{it} which are non-negative random variables which are assumed to account for technical inefficiency in production and are assumed to be independently distributed as truncations at zero of the $N(m_{it}, \sigma_u^2)$ distribution, where;

$$m_{it} = z_{it}\delta$$

where z_{it} is a $p \times 1$ vector of variables which may influence the efficiency of a firm; and δ is an $1 \times p$ vector of parameters to be estimated.

Following the above specification a translog production frontier approach has been followed to estimate the coefficients of capital, labour and its interaction.

The translog production frontier:

$$\ln(Q_{it}) = \beta_0 + \beta_1 \ln(K_{it}) + \beta_2 \ln(L_{it}) + \beta_3 (\ln K_{it})^2 + \beta_4 (\ln L_{it})^2 + \beta_5 (\ln K_{it})(\ln L_{it}) + (V_{it} - U_{it})$$

where;

Q_{it}, K_{it} and L_{it} are output (value added), capital and labour respectively.

V_{it} are assumed normal and U_{it} has truncated normal distribution.

In this paper gross value addition (GVA) has been considered for output, gross fixed capital formation (GFCF) has been considered for capital and total persons engaged has been considered for labour. The whole series during 1980-81 to 2011-12 of the nominal value figures of GVA and GFCF have been converted to real values by considering the wholesale price index (WPI) at constant price 1999-00. As per instructions given in the computer programme of FRONTIER version 4.1 two separate models have been fitted with respect to West Bengal and Gujarat. The

maximum likelihood estimation results are presented in Table 5 and 6 for West Bengal and Gujarat separately.

From the table it is observed that the coefficient of labour is negative in West Bengal. This implies, the contribution of labour in the production process is not significant. It means capital has played the significant role in the organised manufacturing sector in West Bengal. The earlier analysis with respect to capital productivity has shown the similar results.

Table 5
Stochastic Frontier Analysis: Translog Production Function Estimates (West Bengal)

Variables		Coefficient	Standard – Error	t-ratio
Constant	β_0	165.6472	0.9957	166.3671
ln(K) (Capital)	β_1	0.0660	0.8298	0.0795
ln(L) (Labour)	β_2	-23.3012	0.7788	-29.9195
$(\ln K)^2$	β_{11}	0.0804	0.0794	1.0127
$(\ln L)^2$	β_{22}	0.9447	0.1041	9.0728
$(\ln K \times \ln L)$	β_{12}	-0.1335	0.1211	-1.1022
	σ^2	0.0819	0.0105	7.7974
	γ	1.0000	0.0041	242.3947
Log likelihood function = 12.0773				

From Table 6 it has observed that the coefficient of labour is positive and that of capital is negative. This is an indication of the level of productivity with respect to labour and capital in organised manufacturing sector in Gujarat. From this analysis it is understood that labour has contributed significantly in the organised manufacturing sector in Gujarat in comparison to capital.

Table 6
Stochastic Frontier Analysis: Translog Production Function Estimates (Gujarat)

Variables		Coefficient	Standard - Error	t-ratio
Constant	β_0	-508.0484	0.9999	-508.0900
ln(K) (Capital)	β_1	-26.7619	0.9955	-26.8828
ln(L) (Labour)	β_2	102.4901	0.9942	103.0872
$(\ln K)^2$	β_{11}	-0.1669	0.4058	-0.4112
$(\ln L)^2$	β_{22}	-4.9026	0.4009	-12.2291
$(\ln K \times \ln L)$	β_{12}	2.3300	0.8009	2.9093
	σ^2	0.1680	0.0505	3.3302
	γ	1.0000	0.1871	5.3435
Log likelihood function = -3.6654				

Technical Efficiency in organised manufacturing sector

Table 7
Technical Efficiency and annual rate of change in organised manufacturing sector
(West Bengal and Gujarat)

Year	West Bengal		Gujarat	
	Technical Efficiency	**Annual Rate of Change**	**Technical Efficiency**	**Annual Rate of Change**
1980-81	34.17	-	28.67	-
1981-82	35.10	0.92	23.46	-5.22
1982-83	37.23	2.13	26.42	2.96
1983-84	32.54	-4.69	29.01	2.59
1984-85	40.91	8.37	31.61	2.59
1985-86	38.12	-2.78	47.25	15.64
1986-87	49.36	11.24	29.84	-17.41
1987-88	51.58	2.22	32.24	2.40
1988-89	43.12	-8.46	48.81	16.57
1989-90	39.65	-3.47	32.67	-16.14
1990-91	45.63	5.98	34.66	2.00
1991-92	39.33	-6.29	29.69	-4.97
1992-93	44.18	4.84	46.47	16.78
1993-94	44.51	0.33	47.71	1.24
1994-95	35.24	-9.27	49.98	2.27
1995-96	58.37	23.13	37.74	-12.24
1996-97	66.28	7.92	57.18	19.43
1997-98	73.76	7.48	36.18	-20.99
1998-99	69.22	-4.54	53.04	16.86
1999-00	74.37	5.15	58.91	5.87
2000-01	63.58	-10.79	70.83	11.92
2001-02	66.80	3.22	81.46	10.63
2002-03	80.51	13.71	92.14	10.67
2003-04	89.78	9.27	99.05	6.91
2004-05	93.59	3.80	99.90	0.85
2005-06	78.58	-15.00	75.53	-24.36
2006-07	80.72	2.13	76.96	1.43
2007-08	80.48	-0.23	83.06	6.10
2008-09	99.63	19.15	64.73	-18.33
2009-10	64.36	-35.27	78.73	14.00
2010-11	95.47	31.12	72.38	-6.35
2011-12	93.94	-1.53	66.87	-5.51

Mean efficiency	60.63		54.48	

Table 7 presents the technical efficiency (TE) and annual rate of technical change with respect to West Bengal and Gujarat in organised manufacturing sector. It has been observed that apart of labour and capital, technology has contributed significantly in the production process in manufacturing sector. However, the level of variation has observed with respect to West Bengal and Gujarat during the period 1980-1 to 2011-12. In close observation it has found that the mean technical efficiency in West Bengal (60.63 percent) is significantly higher than that of Gujarat (54.48 percent). In 1980-81 the TE in West Bengal was 34.17 percent which has increased to 93.94 percent in 2011-12. The TE in Gujarat was 28.67 percent which has increased to around 70 percent in 2011-12. Though fluctuations have observed in TE during the study period, in both the States but there has significantly upward trend has also observed.

Figure 13
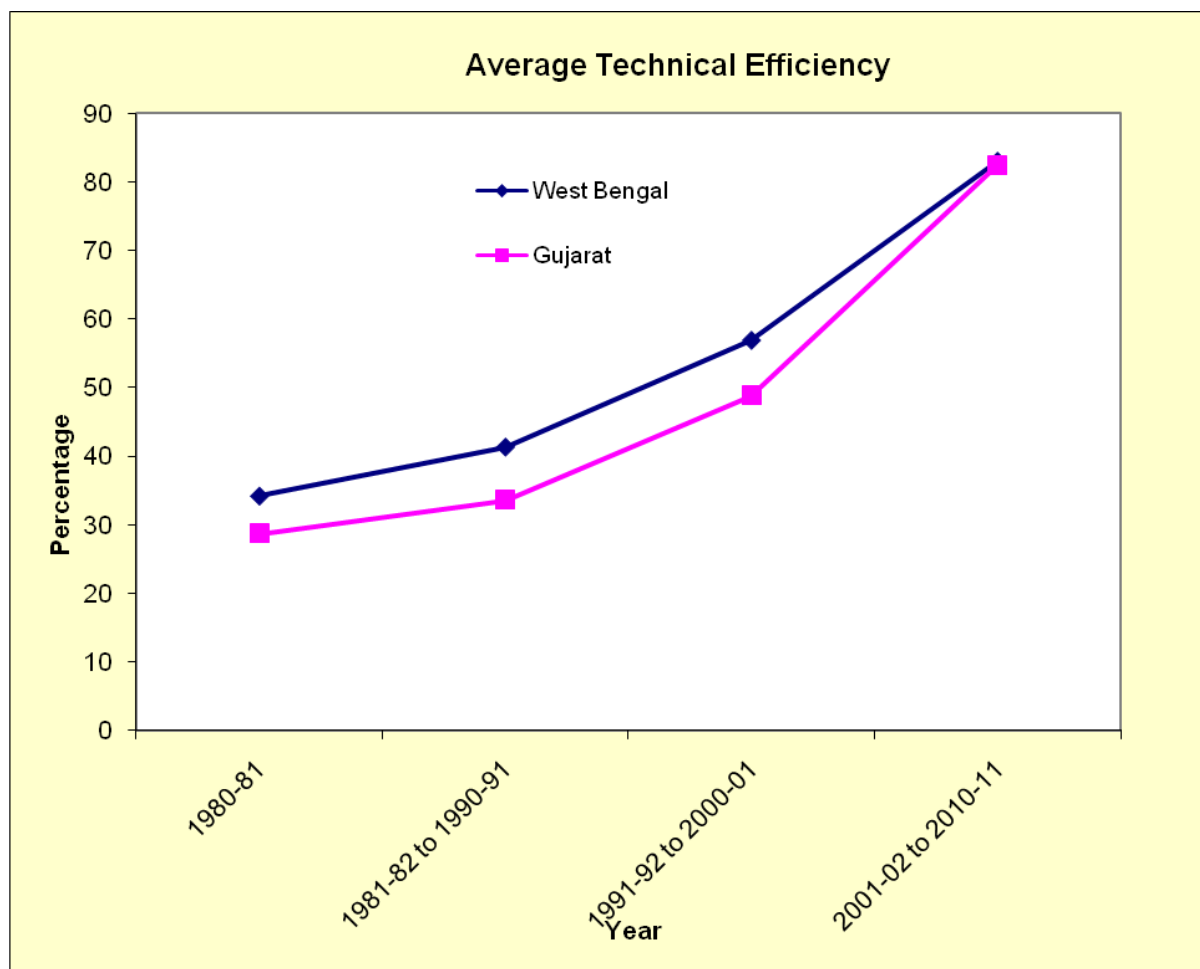**Average Technical Efficiency in organised manufacturing sector**

Figure 13 presents the average technical efficiency in organised manufacturing sector during 1980-81, 1981-82 to 1990-91, 1991-92 to 2000-01 and 2001-02 to 2010-11 with respect to West Bengal and Gujarat. From the figure it has observed that the TE is in upward trend for both the States. However, significantly higher TE has observed with respect to West Bengal. But over the period the gap has reduced and both the states have reached the equal efficiency level of 82 percent during 2001-02 to 2010-11.

Discussion

In the year 1946, the total number of factories in Bengal (West) was 1218 (25%) out of 5013 total factories in India which has been hovering around 4% now. The share of employment has gone down from around 34% to around 5% as of now. The value addition has reduced to around 2 % from nearly 28% in the year 1946.

Figure 14
Share of Bengal (West) in manufacturing sector during pre and post partition
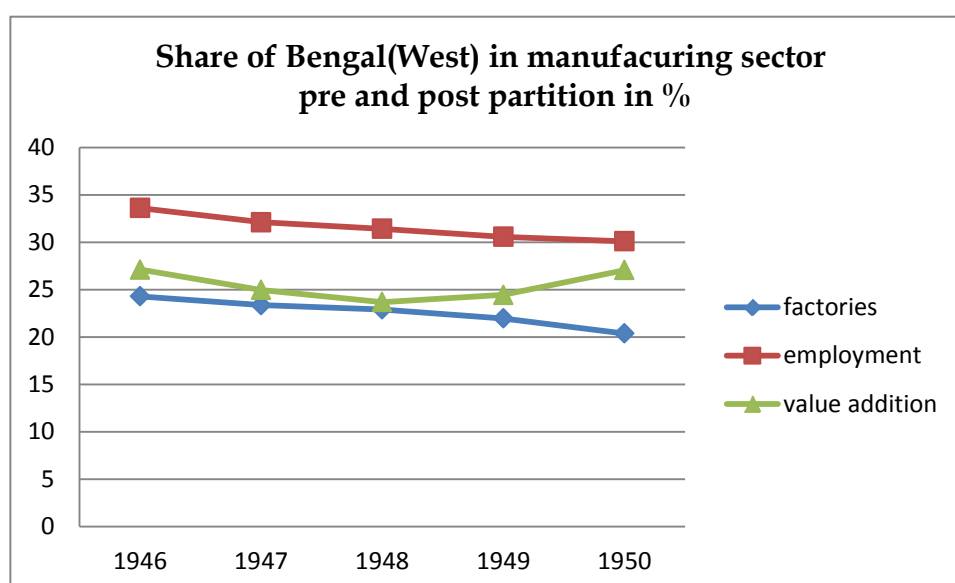
The fall really started from 1947 after partition. Perhaps the most puzzling problem in economics or any related social science is the disentanglement of factors which have led to industrial development or decline of a country or region, as the case may be. When the issue at hand involves a people possessing talent of the first water and institutions par excellence, the riddle is even more difficult to fathom. It is all very convenient to put everything down to the 'inherent lethargy' of a race or 'irresponsible trade unionism', or lack of infrastructure, but such an approach will be at once partial and puerile. A slew of factors conspire to condemn a region to industrial atrophy. West Bengal has been no exception.

Bengal had flourished in the fields of industry and commerce under the British Rule. The slide started after Independence. It is difficult to resist the temptation to conclude that the departure of the master caused the decline of the underling. But historical evidence does not buttress this inference. In the nineteenth and early twentieth century, there were umpteen instances of Bengali entrepreneurs, who were accomplished, had vision, and had the faculty of carrying their plans through. Dwarkanath Tagore acquired coal-fields, ran steamer services and even planned to build a hundred and sixty kilometre long railway. The Anglo-Indian Managing Agency, he helped establish owned jute mills, tea plantations and mines. The legendary Rajendranath Mookerjee, an accomplished engineer, owned the engineering firm, Martin and Burn Co., which ran building projects across the country, built and operated railways, water-works stations and later, under the able leadership of his son Sir Biren (an alumnus of Trinity College, Cambridge University), even the iron and steel company IISCO at Burnpur. Nalini Ranjan Sarkar, a businessman, industrialist, economist and public leader, was the brain behind the establishment of the Indian Institutes of Technology. There is little need to narrate the history of Bengal Chemicals and Pharmaceuticals Ltd., established by the renowned scientist Prafulla Chandra Roy. Surendra Mohan Bose, another enterprising son of Bengal and a Berkeley graduate, founded the first waterproofing plant, Bengal Waterproofs Ltd., which has been producing the famous Duckback brand of rainwear. Kiran Shankar Roy, the industrialist and politician, and an Oxford graduate, founded Bengal Lamps Ltd.. Dr. S. K. Burman, a noted physician, established Dabur, the largest Ayurvedic medicine and related products manufacturer. The Roys of Bhagyakul were into steamships, banking, real estate and manufacturing industry. Janaki Nath Roy, a scion of this family, also owned a jute mill. Biren Roy, another visionary, set up Eastern India's first flying Club at Behala near Kolkata. Other notable ventures by gifted Bengali industrialists were Bengal Immunity, Calcutta Chemical Company and Banga Laxmi Cotton Mill. Almost all of these entrepreneurs were highly educated people who had excelled in their own spheres. And many among them were aroused by the nationalist zeal to prove to the world the worth of Indian talent. Hence, the perception that Bengalis are not suited for industrial ventures is not borne out by facts. They had both imagination and gumption.

It is generally perceived that cultural activity and not industry is the quintessential Bengali's cup of tea. But this is not the case, not only for Bengalis, but for other creative people as well. Attica produced Euripides, Sophocles and Plato when Athens was at the zenith of Mediterranean commerce. Wordsworth, Shelley and Keats penned their poems when the England started reaping the benefits of the Industrial Revolution. Bengal gave birth to Tagore when she was at the forefront among the provinces economically. Now, England cannot produce a Byron, nor Bengal a Michael Madhusudan Dutt. High culture comes with rich economic development. History is replete with such examples.

The body blow received by industry in Bengal was Independence and Partition. Two-thirds of the province, both area-wise and population-wise, went to

Pakistan. Industry in Bengal was centred around Kolkata. But the hinterland was the rich and fertile countryside. Eastern Bengal was even more fertile than the western part. The food and other agricultural consumption goods required by a growing city population, as well as raw materials for some industries, were provided by the rural hinterland. And so was the market. With the hiving off of the greater part of this hinterland, industry was seriously dislocated. The plight of the most important industry in and around Kolkata, viz. jute, bears out the point. Most of the jute-growing areas were in East Bengal, while almost all the jute mills were in West Bengal. With the Partition, this industry was absolutely paralysed. The other factor was the drying up of the investible surplus. Much of the capital invested by the Bengali entrepreneurs mentioned above came from the large surpluses of the big landlords – and most of these Zamindars were based in East Bengal. The Tagores were the most illustrious examples. In East Bengal, the landed property was mainly owned by the Hindus, and the Muslims were mostly marginal peasants or landless labourers. The dispossession of the Hindus, who fled to India, resulted in the loss of surplus which could be invested in industry. Then there was the frightful problem of the tremendous influx of refugees, which threw Kolkata, the main absorber of the shock, out of gear. The pressure on civic amenities, employment, food supplies, etc. was something which few governments could hope to tackle. Another factor was the increase in distance between Kolkata and the North-Eastern hinterland. Assam, Tripura, Manipur suddenly became far off places. Transportation between these places and Kolkata became much more time consuming as one had to go via North Bengal. It may be asked that why Punjab, which was also divided by the Partition, was not affected so much? It has to be remembered that at the time of Independence, Punjab was not an industrially developed State (West Bengal was perhaps the most industrialized), and so had little to lose in terms of industry. Punjab developed much later, benefiting from the Green Revolution and its higher average holding size (it had the first capitalist agricultural system in India), and it was the problem of reinvesting the surplus from agriculture in an industrially barren State which was supposed by many analysts to be the main driver of the Khalistani movement of the 1980s. After Liberalisation, Punjab, like Haryana and parts of Western Uttar Pradesh (the other beneficiaries of the Green Revolution) developed industrially, taking advantage of proximity to the fast-growing National Capital Region. It must not be forgotten that it was wheat, and not rice, which reaped the major benefits from the Green Revolution. Also, Punjab saw a refugee exchange, owing to the highly communal feelings prevailing on this side of the border too. This prevented a surge in population with its attendant problems. West Bengal saw a one-way traffic, and was a victim of its secular ethos.

Though many Bengalis had an acumen for industry, the commercial and industrial sector of the province was dominated mainly by the British, and then by the Marwaris. Independence saw the transfer of management of the bulk of Bengal's industries from the British to the Marwaris. Marwaris had much more capital (with which to buy these firms) than the Bengalis had. But this change resulted in a significant decline in the quality of management. A Report of the Government of

India in the early Eighties on the small-scale industries clearly identifies management lapses, financial and otherwise, as the main factor behind the malady. Lack of modernization and product development and diversification has resulted in obsolescence of machinery and shrinking of markets. The jute, engineering goods and tea industries are glaring instances of the malaise. The Indian business community which took over the reins of industry in Bengal depended heavily on traditional family business ties and archaic business practices. The level of education among this class, which was conservative in both social and business practices, was not to be envied. This situation and business model continued to pay dividends only in a protected environment and in traditional industries mostly dealing with commodities. A shift to a more fluid situation after liberalisation, which called for a dynamic and innovative leadership, made matters worse for Bengal. As is seen now, most of the large industrialists who have emerged on the national scene are highly educated, flexible and innovative. The Gujarati, Sindhi, Parsees had even earlier competed with the Marwaris. Now, the Punjabis and the very savvy South Indians have also overtaken them.

The problem of West Bengal's industry was compounded by the policy freight equalisation put in place by the Government of India, which destroyed the locational advantage of Eastern India. For minerals and some other commodities, freight rates were equalized, but not for chemicals. This gave a clear edge to coastal regions of Western India which took advantage of port facilities, at the cost of the East. Along with the ravages of Partition, this policy effect shifted the centre of gravity irrevocably to Western India. Discovery of oil on the Arabian Sea sea-board was another factor which gave a great fillip to the petro-chemical industry of Western India. Actually, capital flight from West Bengal started from the sixties.

There were serious industry-specific market demand problems too. Jute, which, as a packing material was in high demand worldwide, started facing stiff competition from cheaper artificial fibres in the post-War world. Diversification into jute decorative and utility products other than gunny bags has been attempted but has not been largely successful. Also, Bangladesh, which has most of the jute-growing areas, has set up a number of jute mills and has started competing with Indian jute. World demand for tea has not grown in the recent past as that of coffee has. And, countries like Sri Lanka, Indonesia and Kenya have emerged as major competitors with cheaper tea.

West Bengal has also suffered from protracted industrial unrest. From the days of the freedom struggle, the State has not been a stranger to labour movements – often quite militant. After Independence, the Leftist unions, bolstered by peasant struggles in Tebhaga and elsewhere, and by the Food Movement, led labour campaigns which often resulted in loss in man-days of work. The unethical practices of the business community provided fodder to these movements. The militant Naxalite movement did not help matters as far as investments for new industries are concerned, as serious entrepreneurs look for political stability.

West Bengal has been mostly ruled by parties opposed to the Union Government. And the opposition has been particularly vehement. This has deprived the State from the Central largesse which was ladled out to the other regions. Many non-congresses ruled States have kept cordial relations for deriving financial benefits, though appearing to be at loggerheads with the ruling party at the Centre. West Bengal has paid for its obstinate opposition, which has taken toll on its infrastructural facilities.

The land problem is especially acute for West Bengal because it is the most densely populated and the most fertile State, land has a rich history of militant peasant movements. All these factors have combined to consign West Bengal into a quagmire, which, unfortunately, has a multiplier effect through social psychology. Entrepreneurship depends heavily on the mindset of men. Instead of economics and statistics, perhaps industrial sociology will be a more appropriate subject to understand the chronic problem of industrialisation in West Bengal.

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