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# Influence of the Evolution of Corporate Organization on the Progress of Large Scale Business Enterprise of India in the 19<sup>th</sup> Century

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One of the most popular topics among business historians in U.S. and Europe is how development of large scale business enterprise has been supported by evolution of efficient corporate organization. Since advantage of large scale business enterprise is chiefly derived from mass production for mass consumption, large scale business enterprise needs to develop, to attain scale merit, corporate organization efficiently facilitating transactions of huge number of inputs and outputs; thus, many business historians in U.S. or Europe, where development of large scale business enterprise have been the one of essential driving forces of their modern economic growth, have studied how development of large scale business enterprise was supported by evolution of corporate organization that coordinate transaction effectively.

Such topic has not been popular among business historians of India, although she became the 12<sup>th</sup> largest industrialized nations as early as in 1926-29 in term of gross value of manufacturing product. On a basis of study on development of corporate organization of railway industry, one of the most important industries of colonial India, this paper aims to make a small step toward clarification of how progress of large scale business enterprise of India in the 19<sup>th</sup> century was supported by development of corporate organization. The small step is expected to provide, chiefly on a basis of reinterpretation of existing studies rather than of positive employment of primary sources like government report or archival documents, a new perspective on sure influence of progress of corporate organization on development of large scale business enterprise in India in the 19<sup>th</sup> century.

One of the most popular topics among business historians in the U.S. and Europe is how the development of large scale business enterprise (LSBE, hereafter) has been encouraged by the evolution of efficient corporate organization. Such corporate organization includes labour management systems, internal financing systems, corporate own marketing systems, etc., all of which were established after the 19<sup>th</sup> century by LSBEs to coordinate necessary transactions of inputs as well as outputs more efficiently than the market did. Since the advantage of LSBE is chiefly derived from mass production for mass consumption, LSBEs need to develop, to attain economies of scale, corporate organization

efficiently facilitating the transactions of their huge number of inputs and outputs. Thus, many business historians in the U.S. or Europe, where development of LSBEs have been one of the essential driving forces of their modern economic growth, have studied how the development of LSBE was encouraged by the evolution of corporate organization.

India developed various LSBEs from the mid 19<sup>th</sup> century as one of the first industrial nations in the Asian region, although she did not do so on a similar scale and scope as the U.S., U.K., or Germany. Due to the early emergence as well as the steady progress of LSBEs afterward, India became the 12<sup>th</sup> largest industrialized nation in 1926-29 in terms of gross value of manufacturing product, holding the same rank as the Netherlands, followed by Sweden.<sup>1)</sup> Such early and steady development of LSBEs of colonial India was, presumably, much encouraged by the development of proper corporate organizations, as was the case in leading industrialised nations in the U.S. or Europe.

Although we have several studies showing how such LSBEs developed corporate organization in colonial India, most of these studies do not examine clearly how the progress of LSBE was encouraged by such development of corporate organization. On the basis of existing studies as well as a few government reports on the Indian railway industry, this paper aims to make a small step toward clarification of how the progress of LSBEs of India in the 19<sup>th</sup> century, some of which had already reached international standards in the size of business, was encouraged by the development of corporate organization. This paper is expected to provide, chiefly on the basis of reinterpretation of existing studies rather than of positive employment of primary sources like government reports or archival documents, a new perspective on the influence of the progress of corporate organization on the development of LSBEs in India in the 19<sup>th</sup> century.

This paper consists of four sections. The first section briefly reviews historiographies on the development of the corporate organization of LSBEs of leading industrialised nations as well as of colonial India. The second section statistically indicates how India developed LSBEs in the 19<sup>th</sup> century on the basis of international comparison of the size of enterprise of a few important industries. The third section studies how the growth of Indian railway companies, some of which were, as will be shown in the second section, among the largest business enterprises in the world at that time, was encouraged by the progress of corporate organization. The fourth section is the conclusion.

## 1. Historiographies

### 1.1. U.S. and European Countries

Analysis on development of corporate organization of a specific LSBE has been a popular topic among business historians of industrialised nations. On the basis of the works of Alfred Chandler, one of the most influential business historians, we will review, firstly, how corporate organization of LSBE developed in the U.S. and European countries after the second half of the 19<sup>th</sup> century. Then, we will briefly show how the development encouraged progress of business enterprise afterwards.<sup>2)</sup>

According to Chandler, U.S. and European countries introduced a new form of business enterprise in the second half of the nineteenth century - a business enterprise managed by professional middle management staff who supervised the functioning of various sorts of corporate organizations. The appearance of the new form of business enterprise, according to Chandler, essentially resulted from 'development of new technologies and the opening of new markets'.<sup>3)</sup> Before appearance of such new technologies and the opening of new markets, 'the processes of production, distribution, transportation, and communication in capitalistic economies were carried on by enterprises personally managed by their owner.'<sup>4)</sup> The owner supervised as well as coordinated most transactions of the enterprise by himself, leaving some transactions in the hands of wholesalers. Concentrated supervision and coordination was possible since the volume of necessary transactions of a single enterprise was still quite limited. In the mid 19<sup>th</sup> century when new technologies like the railroad, the steamship, the telegraph, and the cable, emerged sequentially, opportunities arose to explore new markets for business enterprises, some of which succeeded in expanding the scale and scope of their business drastically.<sup>5)</sup> The expansion of business in scale and scope, on the one hand, made the concentration of managerial authority inefficient, and gave, on the other hand, a powerful impetus to develop new managerial organization which was, under the direction of professional middle management staff, to supervise various sorts of transaction of such LSBE in a hierarchical form.<sup>6)</sup>

Under the new form of business, one of the important targets of LSBE has been to develop the supervising ability of a hierarchical organization of management as well as development of efficient corporate organization to coordinate a huge number of transactions. Both the significance of developing such supervising ability as well as efficient corporate organization are pointed out by Chandler as follows;

The commercializing of these (new...quoter's note) technologies required the creation of industrial enterprises to mobilize the necessary capital and employ the large number of workers and managers needed. It also demanded the corporate structures essential to coordinate the flow of goods through the processes of production and distribution and to monitor the different functional activities involved.<sup>7)</sup>

According to Chandler, the steady and smooth evolution of managerial ability as well as corporate organization has contributed most to development of, among a wide range of business fields of LSBEs, a large scale capital intensive industrial enterprise that has enormous potential in realising economies of scale and scope. Moreover, the progress of enterprises involving large scale capital intensive has formed the foundation of modern economic growth. Such industries include the iron and steel industry, chemical industry, ship building industry, railway industry, or the machine industry, which was strongly encouraged by the establishment of the multidivisional organizational structure, engagement of professional management staff, both of which replaced the 'invisible hand' of market in coordinating transaction of inputs and outputs with the 'visible hand' of business enterprise.

## 1.2. India

Although India was basically an agriculture dominated country throughout the colonial period in terms of share of employment as well as production, it already had a number of LSBEs in the early 20<sup>th</sup> century.<sup>8)</sup> Networks of the railway industry as well as the banking industry covered much of the Indian sub continent in the early 20<sup>th</sup> century, while the cotton industry as well as the jute industry grew to be among the leading earners of foreign currency by the end of the 19<sup>th</sup> century. These LSBEs employed more than two million people at the end of the 19<sup>th</sup> century, although the share of this working force in the total labour market of India was less than 10 per cent throughout the colonial period.<sup>9)</sup> Based on the importation of new technology as well as the expansion of new markets, these LSBEs presumably developed similar forms of business to those that enterprises in the U.S. or European countries developed as early as in the mid 19<sup>th</sup> century.

Due to the steady growth of LSBEs as early as in the mid 19<sup>th</sup> century, we have a number of studies examining the causes and effects of such growth of LSBE of colonial

India in that period.<sup>10)</sup> In the case of service industries, on the one hand, Bagchi investigated the development of the banking industry in the 19<sup>th</sup> century with special interest in the influence of government economic policy on this development, while Hurd examined what kind of influence the development of the railway industry of colonial India received from government economic policy, resource endowment, and the general economic growth of India as well as of the world at that time.<sup>11)</sup> On the other hand, Morris investigated how the cotton industry grew in the 19<sup>th</sup> century with special interest in resource endowments, while Chakrabarty clarified that resource endowment as well as the accumulation of depreciation reserves were the twin important sources of the progress of the jute industry in the 19<sup>th</sup> century.<sup>12)</sup>

Despite the accumulation of such well researched monographs, only a limited number of scholars have clarified, on the one hand, to what extent such LSBEs in India share features of LSBEs of U.S. or European countries in the 19<sup>th</sup> century, and, on the other hand, how such growth of LSBEs of colonial India was assisted by the steady development of proper corporate organization, as many business historians of U.S. or European countries have tried to clarify. On the basis of the existing studies on the development of corporate organization as well as a few government reports, we will make, in the following, a small step towards clarification of the influence of the development of corporate organizations on the progress of LSBEs of colonial India in the 19<sup>th</sup> century.

## **2. Development of Large Scale Business Enterprises of India in the 19<sup>th</sup> Century**

Before analysing the influence of the development of corporate organizations on the progress of LSBEs, we will examine the size of Indian LSBEs in the 19<sup>th</sup> century from the viewpoint of international standards.

During the second half of the 19<sup>th</sup> century, India experienced smooth and swift expansion of LSBEs in various fields such as the cotton industry, the jute industry, the railway industry, the banking industry, the tea plantation industry, the coal mining industry, and so on. The emergence of business enterprises in such varying fields was strongly encouraged by the 'transfer of new technologies as well as the expansion of the new markets', both of which were vigorously promoted after sequential events that resulted in the annexation of India to the British empire politically as well as economically. These events included the removal of the East India Company's authority to monopolise trade in 1833, the Great Mutiny in 1857, and the Delhi Durbar in 1877.

Some of these industries were among the largest industries in the world at that time in terms of their capital and the amount of employment they provided. In terms of employment, for instance, the labour force employed by each of the three leading Indian large scale industries at the turn of the century was 392,517 people (railway industry), 181,031 (cotton industry), and 111,272 (jute industry) in 1900/01 or in 1902.<sup>13)</sup> Leading large scale industries of the U.S. in 1910 employed 1,246,596 (railway industries), 308,736 (cotton industry), 272,522 (blast furnace and rolling mill industry), and 36,685 (automobile industry).<sup>14)</sup> while large scale industries in the U.K. engaged 318,000 workers (railway industry in 1901), 523,000 (cotton industry in 1901), 168,000 (iron and steel industry in 1920),<sup>15)</sup> suggesting the three leading large scale industries in India at that time employed only a slightly smaller number of people than the important large scale industries of the U.S. or the U.K. then.

In terms of paid up capital in India, the total amount of paid up capital invested in the railway industry (Rs. 49,460 lakhs in 1913) far exceeded the capital invested in the other two industries (Rs.1,698 lakhs in 1901 in the cotton industry, and Rs.696 lakhs in 1901 in the jute industries).<sup>16)</sup> The amount of paid up capital invested in the Indian railway, on the one hand, was, according to Table 1, equal to 20 per cent of the U.S. railway industry, 25 per cent of the U.K. railway industry, and almost equal to the amount of paid up capital invested in the other two British colonies, Canada or Australia, apparently indicating that a huge amount of paid up capital was invested in the railway industry of colonial India. On the other hand, paid up capital invested in the Indian cotton industry in 1901 was three times more than that invested in the cotton industry in Japan (Rs. 506 lakhs in 1901) which became a fierce competitor to the Indian cotton industry after the beginning of the 20<sup>th</sup> century,<sup>17)</sup> although the amount was less than 10 per cent of paid up capital invested in the cotton industry in the U.S.(Rs.18,883lakhs rupee in 1904)<sup>16)</sup>

The steady growth of Indian large scale industries is indicated by other statistical evidence specific to the railway industry as well as the cotton industry. According to Table 1, firstly, the total mileage, capital, and labour of the railway industry in India ranked at 4<sup>th</sup>, 7<sup>th</sup> and 4<sup>th</sup> in the world respectively at the beginning of the 20<sup>th</sup> century. Since the railway industry had been one of the leading large scale industries in scale and scope even in the U.S. and Europe at the beginning of the 20<sup>th</sup> century, the Indian railway industry could presumably be counted as one of the large scale industries of the world then. The world class volume of business of the Indian railway industry is indicated by other figures; 5<sup>th</sup> in total number of persons carried and 8<sup>th</sup> in total freight carried.

Having this scale of business of the Indian railway industry in mind, we could easily suppose that the industry must have developed a proper corporate organization to coordinate the various sorts of transactions for capital, labour, ticketing, carriage, materials for railway construction and operation, etc., just as U.S. or European railway companies had done.

**Table 1 Statistical Features of the Railway Industry in 1913**

	Total miles of line operated (thousand miles)	Total capital stock (million rupees)	Employees (thousand persons)	Passengers carried (million persons)	Freight carried (million tons)	Operating revenue per mile (dollar)	operating expenses per mile (dollar)
United States	244	26,519	1,815	1,033	1,160	12,859	8,929
Russia(1910)	40	10,805	771	195	259	n.a.	n.a.
Germany	38	14,106	786	1,797	681	22,285	15,607
India	34	4,946	633	457	92	5,953	3,083
Canada	29	4,715	178	46	85	8,751	6,211
Argentina	19	n.a.	n.a.	82	45	n.a.	n.a.
United Kingdom	23	19,992	n.a.	1,233	416	n.a.	n.a.
France(1912)	25	11,719	356	525	219	15,190	9,614
Australia (Commonwealth)	17	2,553	83	249	30	5,611	3,825
Austria	14	5,378	284	301	163	16,169	12,232
Hungary(1912)	13	2,923	147	164	92	8,599	5,451
Italy	8	n.a.	148	93	41	14,261	12,106

Source: Bureau of Railway Economics (1916).

Note: \$ = 3.08 rupee.

This necessity for establishing an efficient corporate organization must have been felt seriously by other Indian large scale industries as well. The cotton industry, whose first mill was founded in India in 1817/18, gathered Rs.169 million of paid up capital in 1901 from 193 mills, meaning each mill employed Rs. 0.8 million of paid up capital on average. Since the total amount of paid up capital employed by the Japanese cotton industry in 1911 was Rs. 50.5 million (54 mills), the amount of paid up capital of Indian cotton mills as a whole was more than double the amount of Japanese mills gathered collectively. Although the amount of paid up capital collected by the Indian cotton industry was rather smaller than that of the Indian railway industry, the Indian cotton industry sometimes experienced considerable difficulty in collecting the capital because it gathered the necessary paid up capital in India where no effective stock exchange or industrial banking system had yet developed. (the railway industry, as will be shown below, had



gathered the necessary capital exclusively in London where such financial institutions had already developed) According to Table 2, on the other hand, cotton mills in India engaged about 2 lakhs of labour force at the beginning of the 20<sup>th</sup> century, which was double the figure for the Japanese cotton industry in 1911, indicating that the industry needed to recruit a labour force that was twice as large as that required for all the Japanese mills.

Table 2 Size of Cotton Mill Industries in India and Japan

	British India + Princely States			Japan (1881,1889,1903,1911)		
	Number of persons employed	Paid up capital (1,000 rupees)	Number of mills	Number of persons employed	Paid up capital (1,000 rupees)	Number of mills
1881	46,430	n.a.	57	n.a.	n.a.	10
1891	111,018	n.a.	134	n.a.	15,415	34
1901	172,883	169,890	193	n.a.	50,593	54
1911	230,649	206,986	263	93,987	95,661	137
1921	332,179	438,723	257	n.a.	n.a.	n.a.

Source: India: Government of India, *Statistical Abstract for British India*, Japan: The Japan Cotton Spinners' Association.

This development of the cotton industry of India in the 19<sup>th</sup> century was a result of the accumulated progress of each enterprise. Table 3 shows that the number of spindles of the top 10 largest cotton mill companies in India, which roughly represents the size of business of each mill, was much larger than those of the largest cotton mills in Japan, although their size were still less than half that of the largest mills in the U.K. and the U.S. This international comparison of the size of the mill business also suggests that Indian cotton mills must have needed to set up an efficient corporate organization.<sup>19)</sup>

Table 3 Top 10 Large Cotton Mills (number of spindles) in Each Leading Cotton Producing Country

1884							
U.K.		U.S.		India		Japan	
J.Mayall	420,000	Harmony	275,000	Maneckji Petit	110,640	Osaka	60,391
Crossess & Winkworth	326,090	Wamsutla	203,000	New Dhurmsey	94,108	Settsu	35,328
Musgrave	257,714	Amoskeag	170,000	Oriental	87,238	Mie	30,672
Sidebottom	293,000	Merrimack	156,480	Sasoon S.&W.	50,220	Kanegafuchi	30,528
J.& J.Hayes	229,880	Lonsdale	151,824	Western India	37,392	Naniwa	30,280

J.Wood	204,000	Boott	142,080	Hindostan	36,840	Hirano	26,680
G.Mayall	200,000	Pacific	136,000	M.Gokuldas	34,336	Kanakin	19,906
T.Taylor	182,000	Dwright	120,000	Anglo-Indian	31,680	Tenma	16,388
J.Marsden	182,000	Great Falls	120,000	New Great Eastern	30,664	Owari	15,328
Middleton & Tong	177,660	Massachusetts	119,528	Mazagon	30,096	Senshu	15,136

1897							
U.K.		U.S.		India		Japan	
J.Mayall	444,000	B.B.R.& Knight	388,862	Maneckji Petit	131,132	Kanegafuchi	81,778
Crossess & Winkworth	325,430	Amoskeag	290,000	J.Sassoon	90,096	Mie	56,784
Musgrave	320,000	Fall River	285,000	Empress	76,684	Osaka	52,297
Sidebottom	293,000	Harmony	275,000	Victoria	71,293	Nippon	40,194
Howe Bridge	250,000	Wamsutta	219,216	Bowrem	65,148	Settsu	38,016
Ryners	230,000	Lonsdale	181,370	Oriental	64,102	Owari	30,340
J.Wood	221,000	Pacific	180,000	Bengal	62,972	Amagasaki	29,873
Horrockses & Grewdon	220,000	Merrimack	158,976	Dunbar	60,880	Hirano	27,616
J.& J. Hayes	216,518	Berkshire	156,292	Sassoon S.&W.	53,624	Kanakin	26,096
Barlow & Jones	210,000	Boott	152,992	Swadeshi	50,780	Naniwa	25,953

Source: Yonekawa (1997), pp.35-8.

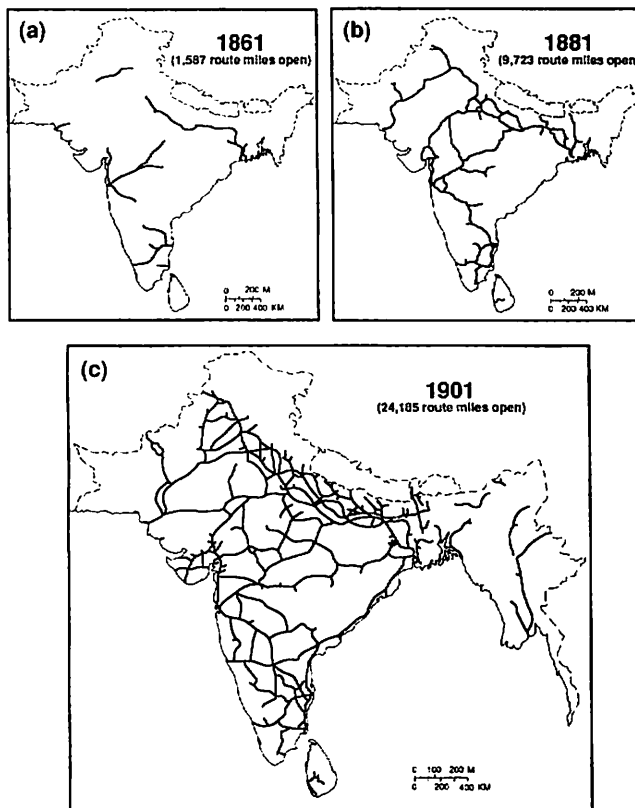
The statistical analyses of the size of business of the two industries collectively suggest that some leading industries of India in the 19<sup>th</sup> century, which were of international standards in terms of the size of their business, must have faced the serious necessity of establishing a proper corporate organization to conduct their input and output transactions effectively, just as some industries in the U.S. the U.K. and Japan did. How did Indian industry develop such corporate organization? How influential was the developed corporate organization on the progress of each enterprise of specific industry? These questions is to be answered in the next section on the basis of a case study of the railway industry in the 19<sup>th</sup> century.

### 3. Development of Corporate Organization of the Railway Isndustry

For the purpose of promoting internal and external trade as well as of raising the

administrative and military efficiency in governing the Indian sub continent, the Government of India proposed to construct a railway network in India in the 1840s. The first railway company was incorporated in 1849, having run the first train on 16 April 1853 between Bombay and Thane, a distance of 34 kilometres. The first venture was followed by sequential establishments of other private as well as state railway companies. With the result that, by the beginning of the 20<sup>th</sup> century, India had 34 thousand miles of railway network that employed more than 600 thousand people (Figure 1)

Figure 1 Progress of the Railway Network in India



The Indian railway industry consisted of dozens of railway companies that were managed by private companies, by the Government, or by princely states.<sup>20)</sup> Although the share of companies managed by private bodies was considerable initially, it consistently decreased, especially after the beginning of the 20<sup>th</sup> century when the Government of India started to nationalise the railway network, resulting in most of the management of one of the world's largest railway networks being put into the hands of the Government

by the time of independence.<sup>21)</sup>

Even before the nationalization of the railway network was initiated at the beginning of the 20<sup>th</sup> century, some of the dozens of privately managed railway companies in the 19<sup>th</sup> century were huge businesses by international as well as Indian standards. In terms of the number of employees, for instance, the East Indian Railway Company, one of the leading railway companies in colonial India in the 19<sup>th</sup> century, had more than 30,000 employees as operational labour as early as the 1880s, while the Great Indian Peninsula Company also engaged about 30,000 people to operate the railway network (Table 4). According to Chandler, the amount of operational labour employed by the Pennsylvania Railroad Company, one of the largest railway companies not only in the U.S. but also in the world then. (the largest in the size of capitalization among all the railway companies in the U.S., Rs 2,593 millions, and 5<sup>th</sup> in operating mileage, 7,950 miles, both in 1893)<sup>22)</sup> was 50,000 – 55,000 men in the 1880s, indicating that the two Indian railway companies were, presumably, among the largest railway companies in the world at that time, at least in terms of employees for railway operation. While the scale of business of each railway company must have exceeded that of companies in other business fields not only in the U.S. but also in other countries at that time, the scale of business of these Indian railway companies meant they could be considered as among the largest business enterprises in the world then.

**Table 4 Number of Labourers Working for Leading Railway Companies of Colonial India**

	Assam Bengal Railway	Bengal-Nagpur Railway	Bengal & North-Western Railway	Eastern Bengal Railway	East Indian Railway	Great Indian Peninsular Railway	Madras & Southern Mahratta Railway	North Western Railway	Oudh & Rohilkhand Railway	South Indian Railway
1885	n.a.	1,931	2,173	6,598	42,220	34,431	14,328	n.a.	12,118	7,256
1895	n.a.	7,170	6,049	11,042	33,682	25,593	18,816	30,395	8,526	8,831
1905	2,590	10,857	8,867	11,959	34,380	29,459	18,220	27,522	9,548	6,931
1915/16	2,837	12,999	7,447	12,356	31,796	30,380	14,201	29,598	8,083	8,632
1925/26	3,084	15,849	7,113	13,998	36,157	27,238	13,495	30,276	n.a.	8,633
1935/36	4,511	18,110	7,551	13,696	34,574	23,078	13,729	29,066	n.a.	10,196

Source: Morris and Dubley (1975).

Due to the significant size of the business of the railway companies, the input and output transactions for constructing and operating the railways were huge, resulting in the establishment of efficient corporate organizations to coordinate these transactions being severely required. This was one of the necessities for steady development of the railway enterprise. On the basis of secondary sources as well as a few government reports, we will

study how corporate organizations, especially corporate organizations for coordinating transactions related to the two main inputs, capital and labour, were established.

### 3.1. Capital Market

Regarding collecting the necessary capital for the business, the Indian railway companies, either privately owned or state-owned, had less difficulty for three reasons.

First, almost all the Indian railway companies in the colonial period raised the necessary capital exclusively in London which had sufficient capacity and experience to raise the amount of money the Indian railway companies required.<sup>23</sup> Table 5 shows that London financed almost 99 per cent of the total capital of the Indian railway companies (roughly equal to £200 million), which made, according to Kerr, Indian railway companies the single largest target of investment of British investors within the nineteenth-century British empire.<sup>24</sup> This concentrated collection of necessary capital in London is, for instance, correctly described by Sharma. He wrote, 'The total number of shareholders and proprietors of the seven Guaranteed Railway companies (some of which occupied the greatest share of the railway industry in capital and labour...quoter's note) was about 46,600 on 31<sup>st</sup> December 1881, out of which only 267 were registered in India, while all the others were registered in England. Out of 267, 101 were European and 166 were native'.<sup>25</sup>

Table 5 Amount of Capital Raised for Railways of Colonial India as well as for All Joint Stock Companies in British India and the Total National Debt Collected in India (in Rs. Lakhs)

	1	2	3	4		1	2	3	4
	Capital for railways raised in London	Capital for railways raised in India	Capital for all joint stock companies raised in British India	National rupee bond met in India		Capital for railways raised in London	Capital for railways raised in India	Capital for all joint stock companies raised in British India	National rupee bond met in India
1860	2,666	n.a.	n.a.	7,297	1900	32,753	200	3,400	12,720
1870	9,001	n.a.	n.a.	7,420	1910	43,605	300	6,300	16,064
1880	12,587	n.a.	n.a.	9,151	1920/21	61,581	1,100	15,800	38,189
1890	21,297	70	2,300	11,344	1930/31	85,481	1,500	27,100	60,791

Source: Column 1 and 2: Government of India, *Statistical Abstract for British India*, and Morris and Dubley (1975). Column 3 and 4: Government of India, *Statistical Abstract for British India*.

Second, the Government of India guaranteed a level of profit for investment not only

for state-owned companies but also for privately owned companies, especially in the initial phase, which helped attract British investment in the industry. The Government guaranteed interest of 4.5 to 5 per cent to all investors in the 1850s and 1860s, although the Government decreased the rate afterwards. This "guaranteed system" was provided by the Government for the purpose of encouraging the investment of British investors in India where previously they must have felt there were serious risks.<sup>26)</sup> The average rate of return of domestic investment opportunity for Britain for 1870-1913 was, according to Edelstein, 4.52 per cent annually while the average rate of return of British debenture for the same period was 3.35 per cent annually, suggesting that the guaranteed rate, 4.5 to 5 per cent, was just sufficient to attract investors in London.<sup>27)</sup> The possible appropriateness of the rate of return is suggested by Kerr. He wrote,

British capitalists were reluctant to risk their money on India railway ventures and the Directors of the East India Company had no wish to build railways...and, at least initially, the Directors had little enthusiasm for guaranteeing to private capital... Finally, in March 1849,... the East India Company agreed on terms with the Great Indian Peninsula Railways and the East Indian Railways.... whereby the two companies would build and operate their respective lines with a guaranteed five per cent return on their stockholders' investment, assured by the revenues of the Government of India.<sup>28)</sup>

Third, after the period of the government guarantee of the 1880s, the Government started nationalizing the railway business gradually, although the progress of the nationalization was slow until the 1920s, resulting in the railway network being slowly but surely financed by the Government of India which had huge capacity as well as the ability to raise funds easily in London. There were two methods of nationalization. First, almost all new lines were constructed by the Government directly after the 1880s. Second, the existing private railway enterprises were purchased by the Government. Under the scheme of nationalization, about 70 per cent of railway mileage was under the ownership of the Government by the beginning of the 20<sup>th</sup> century.

The concentrated collection of almost all necessary capital in London could be attributed to three causes. First, the Government of India, which had authorised the railway business in India, preferred, or demanded that the necessary capital be collected in London to provide a favourable investment opportunity for investors in U.K. Second,

India had hardly any engineering industry that could have supplied railway material such as rails, wagons and so on, meaning the Indian railway industry needed to purchase almost all the necessary material abroad where payment in sterling had a much larger advantage than payment in rupees. Third, although India had a well established market for transacting national bond already in the 1860s, it did not have a similarly well established capital market for business enterprise managed by private or semi public bodies. This inadequate functioning of the capital market for private and semi public concerns is clearly seen in Table 5 which shows, in the fourth column, the total amount of national rupee bond, which was traded mainly in India, and, in the third column, the total amount of paid up rupee capital in India. Due to the inadequate functioning of the capital market for business enterprise in India, the necessary capital for the railway had to be collected from the London capital market, which had the experience and capacity to provide a much larger amount of capital than Indian railway companies needed.

While the concentrated collection of capital in London helped to gather the necessary capital for the development of Indian railway industry quickly and smoothly, it might have deprived the Indian capital market, especially the market for share capital of private concerns, of the opportunity to grow. According to Table 5, the total capital raised by the railway industry was more than ten times the total paid up capital collected in the Indian money market in 1890; thus, only a small portion of the capital raised by the railway industry, if it have had been collected in India, might have had a positive influence on forms of transaction of the Indian money market, whose actual development during the colonial period had been completely inadequate to encourage private concerns to collect the necessary capital at reasonable cost and risk.<sup>297</sup>

### 3.2. Labour

In the case of labour, the Indian railway industry experienced serious difficulty in gathering large numbers of skilled, semi-skilled and unskilled workers. The skills required of the labour force varied considerably from top management staff to physical labourers at construction sites, while the number of labourers as a whole increased from about 400,000 persons in the 1880s to 850,000 in the 1910s. Recruiting, training, and managing such a huge labour force with various types of skills was not an easy task for the industry throughout the colonial period.

The types of labour required by the railway industry can be categorised into roughly two: labour for construction of railway lines, and labour for operating the railway

network. In the following, we will firstly study how the Indian railway enterprise established corporate organization to coordinate transaction of construction labour on the basis of the pioneering works of Ian Kerr, an eminent historian of the railway industry in the colonial period. Then we will examine the progress of corporate organization for operational labour based on a few government reports.

### 3.2.1. Construction Labour

Although we do not have exact data showing the amount of labour employed for construction in the railway industry in the colonial period, we can make an estimate. According to the estimation of Kerr, the Indian railway industry employed 180,601 to 221,253 men per year from 1859 to 1900 on average, on the basis of the assumptions that the industry required 126 to 155 men to construct one mile of railway and it took 2.5 years to construct one mile of railway line on average.<sup>30)</sup> This estimation indicates that the railway industry might have employed 1-2 million labourers for construction in the second half of the 19<sup>th</sup> century if we could assume that one labourer continued to work for 5 to 10 years.

The huge number of labourers for railway construction, most of whom were Indian, were recruited and controlled by two different systems: the contractor system and the departmental system. Under the contractor system, on the one hand, substantial contractors, who were not employees of the railway company and, in most cases, had important knowledge as well as wide-ranging personal connections in areas around work sites, were entrusted by a specific railway company to complete construction of some part of the railway line within a specific time period. Under the contractor system, according to Kerr, 'a substantial contract was a first-order contract authorized by a company... Substantial contracts often had the autonomy to sub-contract..., but they also had legal binding contracts that made them responsible for the completion of their contract by a certain date'.<sup>31)</sup> On the other hand, under the departmental system, a railway company did not entrust the construction business to an outside agency but conducted the business themselves. Under the departmental system, such a specific department was headed by the railway companies' engineer, who was a basically a technical expert without sufficient knowledge of the local area. Such engineers, according to Kerr, sometimes subcontracted part of the construction business to a petty contractor without exchanging a written document as substantial contractors did under the contractor system.<sup>32)</sup> The petty contractor stood 'between European levels of middle and upper level management



and Indian workers who actually performed the manual labour'.<sup>33)</sup>

Indian railway companies used the two systems consistently throughout the colonial period, although the share of the departmental system increased gradually. The gradual increase in use of the departmental system was due to the accumulation of local knowledge as well as personal connections on the side of company engineers in accordance with building up these engineers' experience of railway construction. The accumulation of local knowledge of the company engineer made it possible for him to conduct necessary business without the help of a substantial contractor, which greatly contributed to the gradual increase in the share of the departmental system.<sup>34)</sup>

Under both the substantial contractor system and the departmental system, railway companies recruited, trained, and managed Indian labourers, who actually performed the manual work at construction sites, through petty contractors. Kerr clearly illustrates how Indian manual labour was recruited as well as how it was put under the direction of petty contractors. He wrote,

Workers came to the construction sites in units of varying sizes, recruiting from among the groups... Gangers—who were either themselves petty contractors, or who sold the labour power of the gang to someone else on a task-work, piece work, hourly, or daily-rated basis—were the point of articulation between the actual workers and those who supervised the construction process... The gangers, variously styled *muccadam*, *sardar* or *maistry*, were the ones who made advances to workers in order to persuade them to come to the work-sites... the gangers had an extra-economic connection with their gangs: connections of common caste membership, of shared kinship, of a common point of origination in the same or a nearby village. It was these extra-economic connections that facilitated the act of recruitment and helped to ensure the security of the advance.<sup>35)</sup>

According to Kerr, Indian manual labour, especially unskilled Indian labour, including women and boys, formed 86 per cent of the total workforce for railway construction.<sup>36)</sup> The unskilled labour came from various social backgrounds, among which 'circulating labour' seems to have dominated.<sup>37)</sup> Kerr wrote,

My sources suggest that this body of circulating labour increasingly came to form the backbone of the unskilled segment of railway construction workers and

that those who comprised this swelling body of workers proved even more willing and able to move regionally and then inter-regionally in search of construction work. Many of these types of workers existed in the pre-railway age. Locally recruited labour never disappeared... but it became increasingly less important... most of these workers, particularly the earthworkers, were from the lower margins of Indian society... Some unskilled railway construction workers came from the tribal populations of India and neighbouring frontier areas. Construction in the western and north-western frontier areas drew upon the tribes of Afghanistan, Baluchistan and the frontier areas of Sind and Punjab...the *Santhals*, the *Dhargurs* and the hill tribes helped to build the EIR main line in parts of Bengal in the late 1850s and early 1860s... Tribes were a prominent part of the massive workforce assembled at the Bhoire Ghat.<sup>38)</sup>

Colonial India might have succeeded in developing an efficient corporate organization to gradually coordinate the transaction of labour power for railway construction. Kerr summarised the development as follows.

Many imperfections and immobilities existed in the labour market in the 1850s when the railway construction first began... But soon, for all but the most isolated of constructions, extraordinary efforts on the part of capital were no longer needed. The labour markets became better established and better integrated. Bodies of migratory workers, skilled and unskilled, came to know of employment opportunities. The crucial intermediaries, the emerging petty capitalists, began to link capital and labour across regions and beyond. Established contractors... knew how to obtain gangs of *Wudders* when needed. Even the fresh-faced British Assistant Engineer at his first construction or reconstruction job could, well before the century's end, expect in most circumstances to have petty contractors clamouring for work and assuring the young sahib that the embankments would rise with great rapidity because so many people would be put to work.<sup>39)</sup>

Part of this development of efficient transaction of labour power was, according to Kerr, a result of the creation of a regional and inter-regional labour market fostered by the expansion of the railway network. Kerr firstly wrote, 'Operating railways enhanced the

physical mobility of workers, thus furthering the integration of the labour markets over wider distances'. Then, he concluded,

[t]here was no enduring shortage of labour... we can also find support for this view in the fact that there was a considerable rise in wage rates after the mutiny... Demand outstripped supply for a period of time in many regions. Moreover, railway builders and PWD (Public Work Department of the Government of India...quoter's note) engineers competed with one another for the available supply. However, the inadequate supply of labour was also a function of imperfections in the regional labour markets; there were still major immobilities that restricted the flow of labour. Higher wages, however, had the desired effect and more people made themselves available for railway work... The fundamental issue was not the availability of the needed amount of raw labour but the creation of more integrated, wider spread labour markets that could connect a sufficient supply of workers to the demands of capital for particular quantities of labourers at particular work sites.<sup>40)</sup>

The development of an efficient market for construction labour must have helped establish one of the largest railway networks in India in the 19<sup>th</sup> century.

### 3.2.2. Labour for Railway Operation

In addition to labour for railway construction, the railway industry needed to recruit and train labourers for operating the railway network. According to Morris and Dubley, the number of labourers for operating the railway network increased from 207,788 in 1885 to 428,970 in 1905, indicating that a huge number of labourers were engaged in the business of operating the railway network (Table 6). As is indicated by Table 6 apparently, a large part of the huge working force was composed of Indian nationals. Among 207,788 men in

**Table 6 Total Number of Labourers Working in Railway Companies in India**

	Europeans	Anglo Indians	Indians	Total
1885	4,310	4,402	203,478	207,788
1895	4,594	6,329	262,219	266,813
1905	6,320	8,565	422,650	428,970
1915/16	7,132	9,821	590,010	597,142
1925/26	4,889	13,097	710,435	715,324

Source: Morris and Dubley (1975).

the total working force in 1885, 203,478 were Indian nationals, and in 1905 they numbered 422,650 out of 428,970, indicating that almost 96 per cent of operational labour was supplied domestically in the 19<sup>th</sup> century.

In accordance with the wide ranging types of businesses required for operating a railway network, there were various positions, from top management staff to gangmen. On the one hand, most of the workforce who were qualified for top or middle management, including general managers, divisional managers, station masters, engineers, fitters, drivers and guards, were exclusively recruited from abroad throughout the 19<sup>th</sup> century.<sup>41</sup> On the other hand, some lower management staff and most of the skilled/unskilled labourers such as porters, junior fireman, gangmen and other unskilled workers, were recruited domestically.

Although we do not have sufficient evidence showing how this huge number of Indian nationals working in various posts were recruited or trained, we have some evidence showing how Indian labourers working in maintenance workshops of the railway industry, which was one of the most important units for railway operation, were recruited and trained. According to some estimations, Indian labourers working in maintenance workshops occupied about 23 per cent of the total operational workforce of the railway industry at the beginning of the 20<sup>th</sup> century;<sup>42</sup> and from this we might be able to derive some idea how the operational labour force was recruited and trained.

The Indian railway industry had, in total, 91 maintenance workshops in 1905 (including state as well as private railways). Since the total number of labourers working in such workshops was 77,633 in 1905, the number of labourers in each workshop was 853 on average.<sup>43</sup> Among the almost 100 workshops, some employed more than 10,000 men in a single work site. For instance, the Jamalpur workshop complex of the East Indian Railway Company employed 11,046 men in 1915, while the Kharagpur workshop complex of the Bengal Nagpur Railway Company engaged 7,270 in the same year.<sup>44</sup> The employment of such a huge number of labourers in a single worksite made these workshops some of the most important industrial centres of colonial India.<sup>45</sup>

Written as well as oral evidence given by A.C. Carr, chief mechanical engineer of the Bengal Nagpur Railway to the Indian Industrial Commission in 1916/17, apparently shows from where maintenance workshops recruited their labour force.

According to Carr, maintenance workshops recruited labourers from three sources: European or Anglo- Indians, Indians of some education, and illiterate or partly illiterate Indians. Among the three sources, Carr wrote that illiterate or partly illiterate Indians,

most of whom were recruited from the Indian agricultural class, formed a large part of the labour of railway workshops.<sup>167</sup> This indicates that, on the one hand, the workshops of Indian railways did not demand that candidates for operational labour in maintenance workshops had acquired literacy nor had working experience in modern factories before their employment, and, on the other hand, that the workshop provided an opportunity for such candidates to master the necessary skills after employment. The opportunity to master necessary skills seems to have been effective, according to the statement of Carr. In his oral evidence, he said that despite the disadvantage of illiteracy, many of the illiterate or partly illiterate Indians, when supervised by a competent foreman, developed into first class workmen. Additionally, Carr stated that some of these illiterate or partly illiterate Indians could have been promoted even to the post of foreman and chargeman if they had the opportunity to receive suitable education in their youth after the employment in the workshops.<sup>171</sup> This background of candidates for workshop labour, namely coming from the agricultural class without sufficient educational background, was, according to the main report of the Royal Commission of Labour in India, shared by candidates for operational labour in the engineering department, another important department for railway operation. The main report stated that 'the engineering department gives employment to the largest single class of labour, namely, gangmen who are largely unskilled and consist mainly of hereditary agriculturalists with a decided preference for agricultural work'.<sup>182</sup> This evidence clearly suggests that the agricultural class formed one of the most important sources of operational labour of railway companies in colonial India.

Although the evidence of Carr and the statement of the main report of the Royal Commission of Labour in India referred to the educational and social background of labourers, they did not mention who recruited such candidates or who had actual authority to decide on the employment of the candidate. Although the final authority to recruit as well as to engage was in the hands of the general manager or agents of each railway company, it is not realistic to consider that such top management staff had the actual authority to recruit as well as engage each labourer.<sup>193</sup> In the case of other LSBEs of colonial India, such as cotton companies or jute companies, it is well known that a middleman called a *mukhadam* or *sardar* was entrusted by top management staff with almost full authority not only to recruit as well as engage but also to train and discharge ordinary labourers.<sup>201</sup> Regarding the detail of the characteristics as well as the activity of the *mukhadam* or *sardar*, we have several in-depth researches already, while we know

only, on the basis of the statement of the main report of the Royal Commission of Labour in India published in 1931, that the actual authority for recruitment and engagement of some of the operational labour of railway company was, in the 1930s, in the hands of 'permanent way inspectors', 'station masters' or 'traffic inspectors'.<sup>51)</sup> Neither the main report nor other sources, to my knowledge, give further details of actual characteristics or the activities of these officials.<sup>52)</sup>

According to another part of Carr's statement, only a few labourers were supplied from the two other sources: Indians with some education and European and Anglo-Indians. Since a large part of the skilled labour force came from illiterate or partly illiterate classes of Indian agriculturalists, on the one hand, most of Indians of some education felt a strong reluctance to do work necessitating skilled manual labour along with such illiterate labourers in workshops. On the other hand, the source of supply of Europeans as well as of Anglo-Indians was, undoubtedly small; thus, according to Carr, Europeans and Anglo-Indian were not an important source of labour for workshops.<sup>53)</sup>

Once a labourer was engaged in a maintenance workshop, he had the opportunity to receive training under the apprentice system of each railway company, although opportunity of the training was far from sufficient in number. According to Carr, most large railway companies had an apprentice system for Europeans, Anglo-Indians, and Indians. Under the system, Carr said, 'apprentices in a large workshop are influenced by the standard of workmanship maintained by a number of skilled workmen, to a degree which is impossible in an institution where there may be only one or two skilled instructors, such as a technical college or industrial school, in which the majority are learners'.<sup>54)</sup> In the case of the apprentice system of the Bengal Nagpur Railway Company, labourers received not only practical training in specific techniques for specific skilled posts but also had lessons in reading, writing, elementary arithmetic and drawing.<sup>55)</sup> Under the apprentice system, teachers of practical training were actual foreman or skilled labourers who came from European countries on employment contracts lasting several years, especially in the initial period of railway operation; thus, according to Kerr, 'Europeans...were important transfer agents of railway technology...[w]hat was transferred... is not the discrete technology.... but a technological set of processes. Railway workshops were...locations where tools and machines imbedded in organised, complex work processes were operated, for the main part, by Indians'.<sup>56)</sup>

In addition to the apprentice system, some large scale railway companies provided technical schools, night schools, and day schools for their apprentices, part of whose

expenses were financed by grants from the Government.

Such labourers in railway workshops contributed greatly to the development not only of the Indian railway industry but also of other Indian industries such as mining or the iron and steel industries since these industries hired such trained labour away from railway workshops to meet their own demand for skilled labour;<sup>57)</sup> thus, '[t]he workshops, therefore, will need to be viewed as centres of industrial work and as centres of industrial education', although the apprentice system and the number of labourers supplied by such workshops was very inadequate.<sup>58)</sup>

#### 4. Conclusion

Our aim in this paper was to make a small step towards clarification of the influence of the development of corporate organization on the development of LSBEs in colonial India in the 19<sup>th</sup> century. In the examination above, we have, hopefully, clarified the following two points. First, we have shown that India had dozens of LSBEs in various business fields of international standard as early as the mid 19<sup>th</sup> century. Of particular note is that the scale of business of some railway companies was, presumably, only slightly smaller than that of the Pennsylvania Railroad Company, which was one of the world's largest private business enterprises at the end of the 19<sup>th</sup> century. Second, on the basis of a case study of railway companies, we have briefly examined how LSBEs in India in the 19<sup>th</sup> century developed an efficient corporate organization to achieve smooth transactions of huge number of inputs, especially regarding the labour force, which was indispensable for LSBEs to develop its full potential.

There are still various matters to be studied to provide further clarification of the issues we have examined. First, we have to clarify how railway companies developed corporate organization to coordinate transaction of other essential inputs such as coal or railway materials. Moreover, we need to examine how railway enterprises developed management systems headed by professional middle management staff to coordinate the functioning of various sorts of corporate organizations, each of which was to coordinate transaction of specific input or output. Third, we should expand the scope of our analysis to LSBEs in other business fields. These challenges remained to be studied in future.

**[Notes]**

- 1 ) League of Nations (1945), p.84.
- 2 ) Chandler (1977), Chandler (1990), Chandler, Amatori, Hikino (eds.) (1997).
- 3 ) Chandler (1990), p.18.
- 4 ) Chandler (1990), p.1.
- 5 ) Chandler called such recurrent innovations led by new transportation as well as communication systems in the second half of the 19<sup>th</sup> century "Second Industrial Revolution". Chandler, Amatori and Hikino (1997), p.8.
- 6 ) Chandler wrote, "in the new capital intensive industries with scale dependent technologies the long term financial returns on investments in physical facilities and human resources required more than just building manufacturing plants of optimum size. The throughput needed to maintain the optimal scale required careful coordination not only of flows through the processes of production but also flows of inputs from suppliers and flows of output to intermediaries and final users. Such coordination did not, and indeed could not, happen automatically. It demanded the constant attention of managerial teams". Chandler and Hikino (1997), pp.29-30.
- 7 ) Chandler, Amatori and Hikino (1997), p.8.
- 8 ) Buchanan (1934), Anstey (1929), Morris (1983), Morris (1987), Ray (1992).
- 9 ) Krishnamurty (1982) p.535.
- 10) See reference and footnote of Rungta (1970), Morris (1983), Ray (1992) Roy (2006), Tripathi (2004).
- 11) Bagchi (1987), Bagchi (1987), Bagchi (2003), Hurd (1982).
- 12) Morris (1983), Chakrabarty (1989).
- 13) Railway: Morris and Dubley (1975), cotton: Bombay Mill Owners' Association, jute: Goswami (1991), p.3.
- 14) U.S. Department of Commerce Bureau of Foreign and Domestic Commerce.
- 15) Mitchell (1988).
- 16) Railway: Morris and Dubey (1975), cotton and jute: Government of India, *Statistical Abstract for British India*.
- 17) Japan Cotton Spinners' Association.
- 18) U.S. Department of Commerce Bureau of Foreign and Domestic Commerce.
- 19) How Japanese cotton mills developed corporate organization in the 19<sup>th</sup> century and how influential the development was on the progress of the Japanese mills have been popular research topics of economic historians of Japan. For instance, see Takamura (1971).
- 20) On the history of Indian railway industry, see, for instance, Sahni (1953), Prasad (1960), Khosla (1972), Rao (1975), Hurd (1982), Awasthi (1994), Kerr (1997), Kerr (2001), Kerr (eds.) (2007).
- 21) Even after the Government of India nationalised some railway companies that used to be owned by private enterprises by purchasing share capital of the companies, the Government in the colonial period sometimes subcontracted management of the companies to private companies. This resulted in colonial India having a number of railway companies owned by the state but managed by private bodies.
- 22) Chandler (1977), p.169.
- 23) Kerr (1997), p.2.
- 24) Ibid., p.4.
- 25) Sharma (1990), p.183.
- 26) The guaranteed system has been criticized severely by some historians of India as a system to reward investors in London at the expense of the Indian tax payer. The guaranteed system itself as a method of attracting capital investment was, however, not unknown outside India at that time. For instance, according to Prasad, France and some British colonies introduced similar



systems. However, the systems introduced outside India guaranteed the profit of investors only when such a guarantee did not cause fiscal deficit, giving railway companies the incentive to improve the efficiency of management. Such an incentive system was not given in the guaranteed system introduced in India.

- 27) Although some nationalistic historians of India have pointed out that the guaranteed rate of return was excessively high, Edelstein wrote that the rate was not 'exceedingly' high, when the risks involved in the fluctuation of the exchange rate were taken into consideration. Edelstein (1982).
- 28) Kerr (1997), p.17.
- 29) The deprivation of opportunity has been pointed out by many historians of India. See, for instance, Prasad (1960), p.48.
- 30) Kerr (1997), pp.189-90.
- 31) Ibid., pp.73-4.
- 32) Ibid., pp.73-4.
- 33) Ibid., pp.187-8.
- 34) Ibid., pp.61-2, pp.70-1, p.73, pp.75-6, pp.82-3.
- 35) Ibid., pp.118-20.
- 36) Ibid., p.88, p.113.
- 37) Village labour seems not to have played an important role in railway construction. 'Throughout the half century, the railways employed village labour for building. But throughout the entire period, and throughout the length and breadth of India, the same complaint was repeated over and over: these people were an uncertain and unreliable source of labour, particularly at harvest time. The dictates of India's climate made agriculture (especially at harvest) and railway construction compete for dry-season labour'. Ibid., p.94.
- 38) Ibid., p.97, p.103.
- 39) Ibid., pp.120-1.
- 40) Ibid., pp.124-6, p.191.
- 41) Although the policy of 'Indianization', which aimed to replace expensive European personnel with cheaper Indian staff, started to be introduced after 1865, mainly to reduce labour costs, the progress of Indianization was quite slow. Derbyshire (2007), pp.301-2.
- 42) Nomura (2005), pp.248-9.
- 43) Government of India, *Statistical Abstract for British India*.
- 44) Government of India (1918).
- 45) Quoting Philip Scranton, Kerr wrote that the railway workshop of India was "the point at which people and machine meet". Kerr (2007), p.235.
- 46) Government of U.K. (1919), pp.649-50.
- 47) Ibid.
- 48) Government of U.K. (1931), p.139.
- 49) On the final authority on labour matter, Ibid., pp.137-8.
- 50) Chakrabarty (1989), Das Gupta (1994), Chandavarkar (1994), Basu (2004).
- 51) Government of U.K. (1931), p.139.
- 52) Some scholars impetuously claim that labour management system where top management staff entrusted almost all recruitment and management of the lower class of labour to a middleman like *mukhadam* or *sardar* was a labour management system peculiar to colonial India. However, it is quite a well known historical fact that such a labour management system was extensively utilized in England as well as in Japan in the 19<sup>th</sup> century. (see, for instance, Hobsbawm (1964); Littler (1982); Odaka (2000)) What was peculiar to colonial India was that this management system

continued to be employed in India even after the first half of the 20<sup>th</sup> century when the system in other countries had started to be replaced by a new management system where top management staff directly recruited and controlled their lower classes of labour. Needless to say, study on the peculiarities of the Indian labour management system in the first half of the 20<sup>th</sup> century is beyond the scope of this paper, which has examined the evolution of corporate organization in the 19<sup>th</sup> century. Regarding details of the peculiar features of the Indian labour management system as well as possible causes of continuous employment of the system in the first half of the 20<sup>th</sup> century, see, for instance, Nomura (2005), Chap.7, or, a revised version of this chapter, Nomura (2009).

53) Government of U.K. (1919), pp.650-1.

54) Government of U.K. (1919), p.650.

55) Ibid.

56) Kerr (2007), p.255.

57) Government of U.K. (1919), pp.650-1. Nomura clarified how TISCO, the largest industrial venture of colonial India, recruited skilled labour, and, sometimes foremen from workshops of railway companies in India. Nomura (2005), Chapter 7.

58) Kerr (2007), p.259.

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## 19世紀インドにおける近代的大企業の発展と企業組織

野村親義

19世紀以降の近代的大企業の発展の成否が、大企業内企業組織の発展の成否によって、いかに左右されてきたか。この問いは、長く欧米の経営史家によって問われてきた問いである。近代的大企業の発展の成否は、大量生産・大量販売による製品一単位当たり費用削減の成否に大きく依拠している。このことを念頭に置くと、近代的大企業が順調に発展するためには、大量生産・大量販売に際し必要となる大量の投入財・製品の効率的な取引を実現する企業組織の発展が、是非とも必要となる。19世紀以降の近代的経済発展の重要な礎の一つとなった近代的大企業の発展が、企業組織の発展によって具体的にどのように支えられてきたのか。この問いは、そのため、ながく、欧米の経営史家の注目を集めてきた。

欧米諸国ほどではないにせよ、インドは19世紀半ば以降、いくつかの近代的大企業を有してきた。事実、インドの工業製品生産額は、植民地期の1926・29年すでに、オランダと同じ世界第12位という地位を占め、また、植民地期インドの代表的な大企業を要する鉄道業の中には、世界有数の資本額・雇用労働者数を有する企業もあった。こうした大企業の発展にも関わらず、インド経営史家はこれまで、これらインドの大企業の発展が、企業組織の発展によってどのように支えられてきたのか、国際比較を念頭に置きながら、具体的に明らかにすることは稀であった。本稿は、植民地期インドの鉄道業の発展と鉄道業の企業組織の関係に関する分析を通じ、この研究上の空白を埋めようとするものである。小さいながらも試みられるこの第一歩は、政府報告書や公文書史料を広汎に用いるというよりは、むしろ既存の研究の再解釈に主として依拠しながら、従来あまり注目されなかった19世紀インド大企業の発展と企業組織の発展の積極的な関係を明らかにしようとするものである。