

## Chapter IV

### **Jute Mills in Bengal: The Emerging Phase of 1855-1892**

Although Bengal jute mills enjoyed enormous comparative advantages at the global level, they encountered two-prong competition in their initial phase of development. That was why, as Section I of this chapter discusses, the industry's rate of growth in the initial phase was rather slow, though steady. The industry faced competition from the domestic handloom jute industry, which, as we saw in Chapter II, had long been dominating the markets in India and abroad. In points of raw material costs and labour, the handloom sector was no inferior to modern mills. Also, it had definite advantages over the latter because of its very low overhead costs. The modern sector competed only on the strength of technology and organization, which ensured better quality of products and timely delivery of bulk orders. Equally strong was also the competition from modern jute mills in other countries, especially from those at Dundee. Though Bengal mills enjoyed in this market a sharp competitive edge in respect of costs, the mills at Dundee had developed a strong grip over Bengal's raw jute market where many intermediary interests were involved. It took time for Bengal mills to gain command over the supply chain of raw materials. Section II, however, analyses how Bengal jute mills got over those competitions in several markets during the second half of the nineteenth century. Section III deals with the

competitive struggle between Dundee and Bengal in their respective domestic markets, while Section IV summarises the major findings.

## I

Modern jute industry had a chequered beginning during the second half of the nineteenth century although it was punctuated by a host of adversities. While certain industry-level statistics help us to understand the features of this phase of development, the firm-level information is no less important in this regard. To start with, Table 4.1 presents basic statistics about the emergence of modern jute mills in Bengal during 1855-92.

Table 4.1: Pioneer jute mills in Bengal, 1855-92

Sl. no.	Name of the mill	Year of establishment	Owner/Promoter	No. of looms
1	Acland Mill	1855	George Acland	100
2	Borneo Jute Company	1859	Henderson and CO.	520
3	Gouripur Mill	1862	J. B. and T. Barry	160
4	Serajunge Mill	1864	Hoare, Miller and Co.	310*
5	Alipore Jail Factory	1870	Calcutta Central Jail	130
6	Fort Gloster Jute Mill	1872	Richard Macallister	258**
7	Champdany Jute Mill	1873	Finlay, Muir and co.	358**
8	Budge-Budge Jute Mill	1874	Andrew Yule and Co.	150
9	Shibpur Jute Mill	1874	Apear and Co.	250
10	Samnugger Jute Mill	1874	Schoene, Kilburn and Co.	313
11	Howrah Jute Mill	1874	Ernsthausen and Oesterley	275
12	Oriental Jute Mill	1874	Richard Macallister	350@
13	Asiatic Jute Mill	1874	Cohen Bros. and Co.	70
14	Bengal Press and Manufactures	1874	Schoene, Kilburn and Co.	72
15	Clive Jute Mill	1874	Gladstore, Wyllie and Co.	140

16	Rustomjee Jute Mill	1875	Richard Macallister	125
17	The Ganges Jute Mill	1875	MacNeill and Co	300
18	Hastings Jute Mill	1875	Birkmyre Bros.	230
19	Kamarhatty Jute Mill	1879	James Jardine, Skinner and Co.	202
20	Titaghar Jute Mill	1882	Thomas Duff and Co. (Agent)	260
21	Kankinara Jute Mill	1882	James Jardine, Skinner and Co.	320
22	Victoria Jute Mill	1882	James Luke, Junr.	168
23	Hooghly Jute Mill	1882	Gillanders, Arbuthnot and Co.	300
24	Chandernagore Jute Mill	1892	Gillanders, Arbuthnot and Co	NA

Source: Wallace, Romance of Jute, p. 56-57 and Carter, Jute and its manufacture, pp. 167-70.

N.B. \*For a later period, \*\* For 1878-79, @ For 1889

It may be noted that outside Bengal only two jute mills were set up during this period, and that too, at a very modest scale. Those were Chittavalsah Mill at Madras and Cawnpore Jute Mill at Cawnpore, with looms less than 100 in number<sup>1</sup>.

The growth pattern of the industry, as reflected in the above table and summarised in Table 4.2, shows that the industry began to grow at a modest pace since 1855. In each of the first two quinquennia, two firms were established, followed by the setting up of only one firm in the third. The rate of growth suddenly picked up during 1871-75 when as many as 13 firms came up. There was a lull thereafter with only one firm having come up during 1876-80<sup>2</sup>, four firms during 1881-85, nil during 1886-90 and again one during 1891-95.

<sup>1</sup> Carter, Jute and its manufacture, p. 167

<sup>2</sup> In fact, a state of depression prevailed in the industry during 1875-1882. See, Chowdhury, Evolution of Indian industries, p.141

Table 4.2: Pattern of initial growth in the modern jute industry of Bengal

Period	Number of firms	Cumulative frequency	Number of looms	Estimated investment (in Rs.)
1855-60	2	2	620	2,170,000
1861-65	2	4	470	1,645,000
1866-70	1	5	130	455,000
1871-75	13	18	2851	10,118,000
1876-80	1	19	202	707,000
1881-85	4	23	1048	3,668,000
1886-90	0	23	0	0
1891-95	1	24	NA	NA

Source: Calculated from Table 4.1.

The level of investment is estimated in Table 4.2 on the basis of a norm of Rs. 3,500 per loom which included the construction costs of mill buildings, warehouses, manager's house and overseer's barracks, as well as the cost of looms with all accessories including spinning and engine power. This estimation shows that during 1855-85 a sum of Rs. 18.74 million was invested in this industry. The estimation has certainly downward bias since the expansion and diversification of the existing mills during this period have not been accounted for. Because of such a huge investment, however, the industry must have received tremendous impetus of growth in the initial phase.

One of the major factors underlying such a massive flow of investment in the industry was the managing agency system that Bengal innovated during the nineteenth century. Majority of the contemporary jute mills were associated with such an organisational structure from the beginning. Table 4.3 presents the network of managing agents operating in the contemporary jute mills in Bengal.

Table 4.3: Network of managing agents in Bengal jute mills during 1855-92

Sl. No.	Managing agent	Jute mill
1	A.R. McIntosh and Co.	i. Managed Calcutta (erstwhile Acland) Jute Mill during 1877-80.
2	Finlay, Muir and Co.	i. Floated Champdany Jute Mill in 1873 and managed since then. ii. Managed Calcutta (erstwhile Acland) Jute Mill since 1881.
3	Jardine, Skinner and Co.	i. Floated Kamarhatty Jute Mill in 1878 and Kankinara Jute Mill in 1873 and managed since then. ii. Managed Gouripur Jute Mill between 1862-77.
4	Barry and Co.	i. Managed Gouripur Jute Mill since 1877.
5	George Henderson and Co.	i. Floated Borneo Jute Mill in 1857 and managed since then.
6	McKinnon, McKenzie and Co.	i. Floated India Jute Mill in 1868 and managed since then.
7	Gillanders, Arbuthnot and Co.	i. Floated Chandernagore Jute Mill in 1892 and Hooghly Jute Mill in 1873 and managed since then. ii. Managed Belliaghata Jute Mill (erstwhile Bengal jute Press and Manufactures) during 1877-81
8	Hoare, Miller and Co.	i. Floated Serajgunj Jute Mill in 1864 and managed since then.
9	Bird and Co.	i. Managed Union Jute Mill since 1879
10	Schoene, Kilburn and Co.	i. Floated Samnuger Jute Mill in 1874, and managed till 1884. ii. Managed Bengal jute Press and Manufactures during 1874-77.
11	Andrew Yule and Co.	i. Floated Budge-Budge Jute Mill in 1874, and managed till 1884. ii. Managed Central Jute Mill since 1890.
12	Gladstone, Wyllie and Co.	i. Floated Clive Jute Mill in 1874 and managed since then.
13	Thomas Duff and Co.	i. Floated Titaghar Jute Mill in 1882 and managed till 1884. ii. Managed Samnuger Jute Mill since 1884 and Victoria Jute Mill since.
14	McNeill and Co.	i. Floated Ganges Jute Mill in 1875 and managed since then.

Source: Carter, Jute and its manufacture, pp. 167-170

The managing agents usually floated joint stock companies providing promoter's contribution to the paid-up capital, and assumed the task of management against an agency charge. Many a times, instead of floating a company afresh they acquired existing ones, and pumped fresh investment therein for the sake of agency business. On the strength of their good-will among the public, they could mobilise substantial sums from the market. Their involvement in the industry explained why Bengal's jute mills obtained the majority of investment from India's domestic market. In certain cases, the managing agents had their roots in the United Kingdom enjoying accessibility to the global capital market.

Thus, the agents like the Finlay, Muir and Co., the George Henderson and Co., the McKinnon, McKenzie and Co., the Schoene, Kilburn and Co., the Andrew Yule and Co., the Gladstone, Wyllie and Co., the Thomas Duff and Co. and the McNeill and Co. mobilised substantial funds chiefly from the UK for jute mills in Bengal<sup>3</sup>. There were also instances where the managing agents successfully persuaded international industrial houses, as called by Chapman<sup>4</sup>, to make investments in Bengal's jute industry. The example in point is the Henderson and Co. which persuaded the Borneo Company Limited to invest in Bengal although it intended in its Deed of Settlement to do business in the mineral industry, and that too, 'in the island of Borneo or in some part or parts thereof'<sup>5</sup>. In fact, the Hong Kong Daily News criticized this investment project in June 1858: 'This Borneo Company not only trades in the capacity of an untrammelled individual with as much regard to Borneo as to any other places in which he might have business relation, but it is also embarking large sums in the erection of machinery in Bengal ... Such an enterprise is, of course, highly laudable, but what in the name of all that is consistent, has the Borneo Company to do with it?'<sup>6</sup>. By the manoeuvre of the managing agent, indeed, such an investment was made possible. We have also certain instances of innovations in financial instruments by managing agents. Thus, for example, the James Jardine, Skinner and Co. floated the Kamarhatty Mill of 202 looms with a paid-up capital of only Rs. 400,000 (as against an estimated investment of Rs. 707,000), and the

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<sup>3</sup> Playne, Bengal and Assam, p. 644

<sup>4</sup> Chapman, British based investment, pp.230-251

<sup>5</sup> Cox and Metcalfe, The Borneo company limited, p. 60

<sup>6</sup> Cited in *ibid*, p. 64

rest was raised by way of debenture and loans<sup>7</sup>. Indeed, the high debt-equity ratio enabled the company to pay large dividends on very small earnings<sup>8</sup>.

Apart from the advantages in the mobilisation of funds, the managing agency system lent two other important supports to the industry. In the first place, the agents, especially the larger ones, used to manage a number of companies in diverse fields of industries. Thus, for example, the Bird and Co. was involved in more than 20 lines of business; the Jardine, Skinner and Co. in eight lines of business and the Gillanders, Arbuthnot and Co. in six lines of business<sup>9</sup>. Since they managed a large number of companies together, the overhead costs for individuals companies must have been low due to the scope economies that arose out of technical sub-additivities in management. Moreover, the advantages of vertical integrations were often enjoyed by jute mills through their managing agents. Since a number of agents, such as the Jardine, Skinner and Co., Bird and Co. and the Gillanders, Arbuthnot and Co. simultaneously managed along with jute mills the companies belonging to coal, water and railway transportation, banking and insurance, as well as electricity in later days, jute mills used to get those products and services at easier terms and conditions. Also, when a particular managing agent managed a number of jute mills together – such as the Thomas Duff and Co. who managed the Samnuger Jute Mill, the Titaghur Jute Mill and the Victoria Jute Mill employing more than

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<sup>7</sup> Playne, Bengal and Assam, p. 131

<sup>8</sup> Carter, Jute and its manufacture, p. 169

<sup>9</sup> Playne, Bengal and Assam, pp. 85,128,204

100 European and 31,000 native workers together<sup>10</sup> – there must have been enormous scale economies among Calcutta jute mills operating under the managing agency system.

The managing agency system thus catalysed the initial development of modern jute mills in Bengal. The industry was privileged in three additional aspects, apart from what we have already accounted for above. The foremost one surely involves the question of land. There is ample literature describing Dundee jute mills to have scrambled in multi-storied buildings with an acute shortage of space as well as water. Indeed, Turner argues that the evolution of Dundee town during the eighteenth-nineteenth centuries was largely conditioned by the courses of local streams and spring sources<sup>11</sup>. In contrast, both land and water were at a great plenty in Bengal. As a result, the Calcutta mills not only always afforded very spacious office accommodations but also comfortable factory sheds, stretching over extensive plots of land. The Victoria Mill, for example, had a land area of about 40 acres, which no Dundee mill could even dream of<sup>12</sup>. In majority of the cases, however, the mills were constructed on the shed system with a roof supported by iron columns of about 20 feet high and proportionately large girders, so that the structures were very lofty. Those sheds were generally 450 feet long and 300 feet wide with about three acres of floor space, and were kept entirely open on all sides so that uniform temperature was ensured<sup>13</sup>. In fact, mill

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<sup>10</sup> Ibid, p. 103

<sup>11</sup> Turner, *The evolution of the pattern of the textile industry*, p. 109

<sup>12</sup> Carter, *Jute and its manufacture*, p.165

<sup>13</sup> Ibid, p.169

managers and foremen from Dundee got charmed in those contrasts between Dundee and Calcutta mills, and loved to work in the latter. As Whatley describes, 'Unlike in Dundee, where access to water and space were at a premium and mills and factories and much housing had to be built several storeys high, and in which conditions were cramped and airless, most Indian mills were well-built, single storey structures, spacious and well-lit – something that often came as surprise those who had grown accustomed to life and work in the densely packed town of Dundee, its mills and chimneys crammed alongside the deteriorating housing stock'<sup>14</sup>.

Secondly, Calcutta mills also enjoyed a cost-effective transportation network. They were largely located on the bank of the river Hooghly, which is a branch of the Ganges, the Padma being its another branch flowing across the rich jute-growing belt of the present-day Bangladesh with its numerous tributaries. Through those tributaries and branches of the Ganges the mills used to get the supply of raw jute from the hinterland. The river transport also provided the mills with an easy accessibility to the up-country markets in the north and the port of Calcutta in the south. The industry also enjoyed a unique coverage of railway transport because of the concentration of the mills within narrow geographical limits. Relative to Calcutta, the Budge-Budge Mill was located 12 miles below and the Gouripur Mill 28 miles above, with other mills dispersed in between<sup>15</sup>. Most of those mills were situated on the left

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<sup>14</sup> Whatley, *Dundee and India: Roots, rivalry and interdependence*, p.6

<sup>15</sup> Carter, *Jute and its manufacture*, p. 166

bank of the Hooghly with their sidings connected with the Eastern Bengal State Railways. The mills on the right bank of the river similarly enjoyed the service of the East Indian Railways. Through the Jubilee Bridge over the Hooghly at Naihati, close to Gouripur and just above Chandernagore, the East India Railways was connected with the Eastern Bengal State Railways that ran across the heartland of Bengal's jute districts.

Thirdly, the industry got the advantages of very large deposits of coal seams in the Asansol-Raniganj belt (only about 40 miles away from Calcutta), which began to be mined extensively under European enterprises at large from the early 1840s. In the early 1860s, the first railway service was introduced in Bengal connecting Asansol with Calcutta so that the cluster of jute mills in and around the city could obtain a smooth flow of coal at low costs. Indeed, the development of collieries in Bengal along with the construction of railways from the mid-nineteenth century onwards was a great boon to the modern jute industry at its nascent stage of development.

It is of topical interest to find out the involvement of Dundee, or more generally Scotland, in the development of Bengal jute industry. In respect of investment, their direct involvement was not, however, substantial since much of Dundee's surplus fund from the business of jute used to be invested in North America<sup>16</sup>. While Dundee did not take seriously into consideration the contemporary development in Bengal during the first two decades, it began to increasingly show interest in it

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<sup>16</sup> Sethia , *The Rise of the Jute Manufacturing Industry in Colonial India* , p. 80

from about the mid-1870s. Three so-called Dundee mills came in succession during 1874-82: the Samnuggar Mill, 'really the first Dundee concern', in 1874<sup>17</sup>, the Titaghar Mill, 'the second Dundee concern', in 1882 and the Victoria Mill in 1882. All these companies subsequently came under the managing agency of the Thomas Duff and Co., which was formed and registered in Scotland in 1883 for carrying out the managing agency business for jute mills in Bengal<sup>18</sup>. While it promoted the Titaghar Mill the other two companies were acquired later on. Of the latter companies, again the Victoria Mill was set up by a Dundee-based entrepreneur, James Luke, Junior. Under the management of the Thomas Duff and Co., however, these jute concerns grew rapidly over the decades owning as many as nine mills in 1916 with 4,343 looms in aggregate<sup>19</sup>. It is also learnt that the London-based managing agent the MacNeill and Co. mobilised fund for the Ganges Mill (an estimated amount of Rs. 1.05 million) chiefly from a Scottish town, Glasgow, and London<sup>20</sup>. The investment of the Hastings Mill also came chiefly from Scotland since the Birkmyre Brothers erected it by transferring the entire machinery of Greenock Sacking Company in Lyndoch street, Greenock<sup>21</sup>. Two more renowned managing agents of Bengal jute mills were based on Scotland, namely the Finley, Muir and Co. and the Mackinnon, Mackenzie and Co. These apart, the Borneo Company Ltd. were related with Scottish-based mercantile network through John Harvey and Robert

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<sup>17</sup>Carter, Jute and its manufacture, p.168

<sup>18</sup> Playne, Bengal and Assam, p. 103

<sup>19</sup> Carter, Jute and its manufacture, p.169

<sup>20</sup> Playne, Bengal and Assam, p. 85

<sup>21</sup> Ibid

Henderson<sup>22</sup>. In addition to providing investment, these Scottish managing agents provided much-needed entrepreneurial and managerial supports to the initial development of Bengal jute mills. These supports were in addition to what Dundee contributed to Bengal as a monopoly supplier of plants and machinery as well as trained manpower at managerial and supervisor levels<sup>23</sup>.

Although the industry-wise data, as analysed above, depict a rosy picture about the initial phase of the industry's development, it was *prima facie* not really so in the firm-level data. Many pioneers of this venture burnt their fingers in the experiment. Thus, for example, George Acland, a Devonshire entrepreneur<sup>24</sup> who set up the first jute mill (actually jute spinning mill) in Bengal in 1855, made good profits from it in first two years but it was burnt down in 1858. He re-started it as the Ischera Yarn Mills Co. Ltd. with about 100 looms. But it became sick in 1868 and was sold by auction to the Barrodaile, Schiller and Co. who, as its managing agent, launched it in the name of the Calcutta Jute Mills Co. Ltd. with 260 looms. It again became sick in 1877 leading to the transfer of agency to the A.R. McIntosh and Co.. Ironically, it became bankrupt this time in 1880 and in the following year, the Champdany Co. took over and re-christened it as the Wellington Mill<sup>25</sup>. The story of this pioneer concern shows the severity of teething problems of Bengal jute industry. Similar was the fate of an American entrepreneur, Richard

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<sup>22</sup> Cox and Metcalfe, *The Borneo company limited*, p. 59

<sup>23</sup> Sethia, *The Rise of the Jute Manufacturing Industry in Colonial India*, p. 87

<sup>24</sup> Carter, *Jute and its manufacture*, p.167

<sup>25</sup> *ibid*

Macallister, who floated as many three jute mills in Bengal. His first venture in 1872, the Fort Gloster Mill, became sick in 1879 and remained closed for some years when its share of Rs. 100 each was plumped to Rs. 8<sup>26</sup>. It was ultimately taken over by the Kettlewell, Bullen and Co. His second venture was the Oriental Jute Co. Ltd., started in 1874, but it also became sick in 1878 when Henry S. Cox, a Dundee-based entrepreneur, took over the agency. But a huge loss was incurred in the next year so that its agency was finally passed on to the Bird and Co<sup>27</sup>. Wallace notes, 'Macallister was equally unhappy with his next attempt - the Rustomjee Twine and Canvas Factory, now the Central.'<sup>28</sup> It was started with 125 looms in 1875 but became sick very soon afterwards. In 1880, J. Webster of Dundee took over its agency and re-started it as the Goosery Jute Mill with 200 looms. But it again collapsed in 1885 and its agency passed on to a Parsee entrepreneur of India, Chunda Ramjee. It is, however, learnt that after making a fortune out of it Ramjee sold it to the Andrew Yule and Co. in 1890. Similar was the fate of the Bengal Jute Pressing and Manufacturing Co., commissioned by the Schoene, Kilburn and Co. in 1874 with 172 looms. It collapsed in 1877, passed on to the Gillandars, Arbuthnot and Co., and was re-started as the Balliaghata Co. Ltd<sup>29</sup>. Fallen to sickness it was taken over by the Barnagore Co. in 1881. Also, James Luke, Junior, a Dundee-based entrepreneur, established

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<sup>26</sup> Wallace, Romance of jute, p. 30

<sup>27</sup> Carter, Jute and its manufacture, p. 168

<sup>28</sup> Wallace, Romance of jute, p. 30

<sup>29</sup> Carter, Jute and its manufacture, p. 168

Victoria Mill in 1882 but he could not make it functional till 1886, and afterwards the Thomas Duff and Co. took it over<sup>30</sup>.

## II

While modern jute mills had been emerging in Bengal, the global jute market was dominated by Dundee's jute mills, on the one hand, and the cottage jute industry of Bengal, on the other. In such a competitive environment, those emerging mills sought to enter into the domestic markets of the country, and consolidated their positions there through 1866. Only thereafter did they venture for foreign markets. It is learnt that the Calcutta mills sent only a small assignments to Burma before 1866<sup>31</sup>.

To understand market dynamics between Bengal's traditional and modern jute industries, we estimate the time series of their exports (both outside India and its domestic markets outside Bengal) in Table 4.4. The series of total export in Column 2 of the table is obtained by aggregating the export to foreign ports and that to the domestic ports outside Bengal. Those are available in terms of quantity, which we have converted into value series on the basis of prevailing prices, namely, Rs.0.72 per bag<sup>32</sup>.

The export series of mill-made bags is estimated under the assumption that jute mills in Bengal ran under full utilization and that their outputs were entirely sold outside Bengal. Based on the number of

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<sup>30</sup> Ibid, p. 169

<sup>31</sup> Playne, Bengal and Assam, p. 643

<sup>32</sup> Government Administrative Report in 1872-73, p. civ-statistical returns

their looms in various years, the export volumes of the modern sector are estimated assuming the average level of production at 12,469 bags per loom per year<sup>33</sup>. Deducting the resultant series from total export of bags we obtain the export series for hand-made jute bags.

Table 4.4: Estimated exports of hand- and mill-made jute products from Bengal, 1863-71 (in pieces)

Year	Total export	Mill-made bags	Hand-made bags
1863-64	22,484,777	9,725,820 (13.26)	12,758,957 (56.74)
1864-65	24,170,636	13,591,210 (56.23)	10,579,426 (43.77)
1865-66	37,989,581	13,591,210 (35.78)	24,398,371 (64.22)
1866-67	31,488,221	13,591,210 (43.17)	17,897,011 (56.83)
1867-68	31,255,644	13,591,210 (43.49)	17,664,434 (56.51)
1868-69	32,444,040	13,591,210 (41.89)	18,852,830 (58.11)
1869-70	33,588,962	13,591,210 (40.46)	19,997,752 (59.54)
1870-71	30,168,209	15,212,180 (50.42)	14,956,029 (49.58)
1871-72	31,568,549	15,212,180 (48.19)	16,356,369 (51.81)
1872-73	31,810,795	18,429,182 (57.93)	13,381,613 (42.07)

Source: Estimated from Kerr, Report on the cultivation of jute, Appendix L  
N.B. The bracketed figure represents the percentage of total.

It appears from the table that in 1863-64 hand-made bags constituted about 57 per cent of Bengal's total export of jute bags. Though they reduced to 44 per cent in the next year, their market supremacy was regained in 1865-66 itself, and continued for a couple of years thereafter. The table shows that the share of hand-made jute bags in Bengal's aggregate export hovered in the range of 56.50-59.50 per cent during 1866/67-1869/70. Only in 1870-71, however, the mill-made bags superseded their counterparts, the market share of former being 50.42 per cent and that of the latter 49.58 per cent. Though they lagged behind in the following year, their share became about 58 per cent in 1872-73.

<sup>33</sup> In 1872-73, the Baranagar mill produced 9.5 million from 16,000 ton of raw jute (Administrative Report, 1872-73, p. 226). Therefore one ton of raw jute produced  $9,500,000/16,000 = 593.75$  bags. In 1878-79, at Calcutta mills, 260 looms consumed 109,294 cwt (Administrative Report 1878-79, p. 206). Therefore, one loom consumed =  $109,294/260 = 420.36$  cwt. = 20 ton (at 1 ton=20cwt) =  $21 \times 593.75$  bags = 12,465 bags per year.

Table 4.5 shows that this trend accelerated in the following years. The share of mill-made bags increased to 70 per cent in 1875-76, 86.81 per cent in 1877-78 and 85.66 per cent in 1878-79. Thus, there was a complete victory of modern jute mills over the traditional sector by the close of the 1870s.

If we take into account only the domestic markets (outside Bengal), the Calcutta mills are found in Table 4.5 to have acquired more than 95 per cent of the market by 1885-6. In certain years thereafter, the market share of handloom products did increase, but it was due to the supply-side constraints for power loom products.

Table 4.5: Division of Indian and foreign markets between the modern and traditional industries in Bengal (in piece)

Year	Indian ports			Foreign ports		
	Power-loom	Hand-loom	Total	Power-loom	Hand-loom	Total
1875-76	21,640,648* (70.09)	9,236,034* (29.91)	30,876,682	17,554,904	1,139,111 (6.08)	18,717,850 ©
1877-78	28,450,923 (86.81)	4,324,528 (13.19)	32,775,451	24,416,369	677,000 (2.69)	25,093,369
1878-79	17,006,438 (85.66)	2,848,372 (14.34)	19,854,810	42073859	1,828,400 (4.16)	43,902,259
1884-85	37,100,123 (83.31)	2,661,073 (6.69)	39,761,196	76,708,454	4,918,150 (6.02)	81,616,904
1885-86	39,566,071 (95.36)	1,928,590 (4.64)	41,494,661	61,687,919	496,712 (0.79)	62,184,631
1886-87	34,392,655 (93.66)	2,331,780 (6.34)	36,724,435	63,499,413	404,150 (0.63)	63,903,563
1887-88	44,292,003 (95.85)	1,921,550 (4.15)	46,213,553	72,569,165	406,450 (0.55)	72,975,615
1888-89	35,859,655 (95.41)	1,723,160 (4.59)	37,582,815	95,862,173	1,044,450 (1.07)	96,906,623
1889-90	36,048,488 (95.18)	1,829,400 (4.82)	37,877,888	94,681,874	631,375 (0.66)	95,313,249
1890-91	49,841,506 (90.56)	5,198,550 (9.44)	55,040,056	95,507,129	1,105,800 (1.14)	96,612,929

Source: Government Administrative Report in different years.

N.B.: © The series also includes the equivalent pieces of bags for cloths. This is derived by dividing the value of cloth by the price of bag.

\*In the absence of segregated data, estimation is done on the basis of the actual ratio between them for Bombay, viz. 4,954,940 handloom bags and 11,651,430 powerloom bags, in 1875-76.

Table 4.6 displays the exports of domestically produced jute bags (handloom and powerloom taken together) to various domestic markets in India (outside Bengal) during 1863/64-1872/73. Obviously the powerloom sector had increasing shares in these markets. The table indicates that the four ports, namely Bombay, Madras, Rangoon and Akyab, took the bulk consignments from Bengal during 1863/64-1867/68. Their aggregate share was more than 97 per cent of the total. Although the last one became dormant since 1868-69, the other three ports retained their dominance. Among these markets, Bombay was certainly far ahead up to 1870-71 gradually losing its importance thereafter. In 1863-64, it absorbed 72.66 per cent of Bengal's jute consignments; but the share gradually fell down to 50.35 per cent in 1870-71. In the following two years, Bombay consumed 40.07 per cent and 36.37 per cent respectively. Rangoon became the most lucrative market during the early 1870s with its market shares at 41.80 per cent in 1871-72 and 53.28 per cent in 1872-73. It should be noted that the share of Rangoon was only 11.80 per cent in 1863-64, but it increased through oscillations to 30.45 per cent in 1868-69 and to 39.31 per cent in 1870-71. The market share of Madras also improved over these years. It was 3.93 per cent in 1863-64 but 16.93 per cent in 1868-69 and 17.64 per cent in 1871-72. In absolute term, the domestic market of Bengal jute products (outside Bengal) was Rs. 3,64 million in 1863-64, and expanded to Rs. 5,39 million in 1868-69 and Rs. 6,49 million in 1872-73.

To indicate the share of the mill sector in these markets, we take into account the information, as stated above, that the mills sold their output only in the domestic markets till 1866. Hence, Column 3 of Table 4.4 represents the sale of the mills in the domestic markets. Assuming the price of bags at Rs. 0.22, the value series of the last column of Table 4.6 may, however, be converted into the quantity series of domestically produced bags sold in the domestic markets. The figure comes out to 16,532,509 for 1863-64, 19,176,318 for 1864-65, 24,377,295 for 1865-66, and 15,188,694 for 1866-67. On comparison we then find that the mill-made bags captured a domestic market share of 58.83 per cent for domestically manufactured bags in 1863-64. The share increased to 70.87 per cent in 1864-65 but fell again to 55.76 per cent in 1865-66. Since for 1866-67 the figure is 13,591,210 pieces for mill-made bags and 15,188,691 for total domestically manufactured bags, the mills' share became 89.48 per cent. Thus, the Calcutta mills occupied the lion's share of India's domestic market by the end of the 1880s. On the support of this domestic market the modern jute industry made its initial stride of development.

Table 4.6: Export value of bags, cloth, twine and rope (both handloom and powerloom) from Calcutta to Indian ports during 1863-1873 (in Rs.)

Year	Bombay	Madras	Rangoon	Pondichery	Bimlipatm	Akyab	Cochin	Cocanada	Gopalpur	Moulmein	Others*	Grand total
1863-64	2,642,816 (72.66)	142,982 (3.93)	429,314 (11.80)	3,502	11,560	393,551 (10.82)	1,072	6,195	1,000	3,250	1,910	3,637,152
1864-65	2,395,784 (56.79)	286,535 (6.79)	1,138,519 (26.99)	Nil	38,721	269,719 (6.39)	485	11,881	18,202	16,675	42,269	4,218,790
1865-66	3,389,081 (63.19)	393,731 (7.34)	985,817 (18.38)	1,200	12,415	447,881 (8.35)	22,172	7,543	1,869	30,357	70,939	5,363,005
1866-67	2,231,085 (66.77)	279,250 (8.36)	572,206 (17.12)	Nil	11,205	169,447 (5.07)		26,957	1,860	39,222	10,280	3,341,512
1867-68	2,542,000 (63.84)	177,193 (4.45)	776,561 (19.50)	Nil	4,957	394,527 (9.91)	2,766	51,428	5,712	10,800	15,705	3,981,649
1868-69	2,828,261 (52.51)	911,681 (16.93)	1,639,775 (30.45)	6,066	Nil	Nil	Nil	Nil	Nil	Nil	Nil	5,385,783
1869-70	3,715,201 (66.43)	545,192 (9.75)	1,328,969 (23.76)	3,025	Nil	Nil	Nil	Nil	Nil	Nil	Nil	5,592,387
1870-71	1,652,470 (50.35)	339,390 (10.34)	1,290,111 (39.31)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	3,281,971
1871-72	2,034,568 (40.07)	895,837 (17.64)	2,126,857 (41.80)	20,218	Nil	Nil	Nil	Nil	Nil	Nil	Nil	5,077,480
1872-73	2,359,447 (36.37)	659,069 (10.16)	3,456,443 (53.28)	12,536	Nil	Nil	Nil	Nil	Nil	Nil	Nil	6,487,495

Source: Kerr, Report on the cultivation of jute, Appendix L

\* Calicot, Cannanore, Tellichery, Alipore, Badagory, Corringa, Mangalore, Monsurocotta, Naracole, Nigapatam, Quilandi, Tuticorin, Arracan, Bassei.

The handloom sector of Bengal had already been cornered in the foreign market by 1875-76. Table 4.5 shows that it accounted for only six per cent of India's jute products sold in such markets. About 94 per cent of it was under the control of Bengal mills. This share for the handloom sector was further squeezed to less than one per cent by the second half of the 1880s. It should be noted that initially Dundee mills cornered Bengal's handloom products in those markets; and the process was accentuated after the entry of Bengal's mills in those markets.

In the foreign markets, however, Bengal mills encountered main competition from their counterparts at Dundee. Table 3.6 in the previous chapter helps us to understand how they won over the competition. It appears that from about 1865-66 Calcutta mills began to invade countries lying in Far East where, as we already discussed, they enjoyed comparative advantages over Dundee mills similar to their advantages in India's domestic market. In four such countries, namely Java, China, Strait Settlements and Ceylon, Bengal's aggregate export was only Rs. 298,260 in 1864-65, but increased to Rs. 400,713 in 1865-66. Remaining at slightly depressed state of about Rs. 350,000 per annum in the following two years, it further increased to Rs. 841,713 in 1868-69 and Rs. 887,631 in 1869-70. Since those were decaying years for Bengal's hand-loom jute, such a rapid market expansion must have been due to Bengal's modern jute mills. The market dynamics in those countries were such that the value of export fell there in the initial years

because of the competitive failures of Bengal's traditional industry, but it began to rise when modern jute mills entered into those markets. Hence, the turning points from falling to rising trends in those series should indicate when Bengal mills entered into those markets; and also, the increasing market shares thereafter should be attributed to those mills. Under such an assumption we conclude that Bengal mills entered into the market of Strait Settlements in about 1865-66, into Ceylon in 1868-69, and China in 1869-70.

Bengal mills then gradually advanced to the markets of Australia, New Zealand and North America. An analysis of Table 3.6 in the previous indicates that Bengal mills entered into the market of Australia and its neighbourhood in 1868-69, and into North America in 1869-70. The series for former during 1863/64-1867-68 indeed includes the exports to New South Wales. It became only Rs. 68,839 in 1867-68. In the next year, it rose to Rs. 177,321 and reached at Rs. 380,567 in 1872-73 through oscillations. In the Continental markets, Bengal mills could not capture any significant share because of their domestic industries which grew up under the patronage of their respective governments. They, however, succeeded in the markets of North America which had once been the stronghold of Bengal hand-made jute. Table 3.6 indicates that Bengal sold her hand-made jute items by Rs. 2.76 million in 1866-67 but the amount shrank to Rs. 690,589 in 1868-69. Possibly due to modern mills, it again grew to Rs. 2.80 million 1870-71.

The export series for 1873/4-1889/90 is presented in a separate table (Table 4.7) since the market destinations underwent certain changes in this period. Three important conclusions are suggestive from this table<sup>34</sup>. First, the foreign markets from Bengal jute grew at a high rate in this duration<sup>35</sup>. An overall growth rate of 68.76 per cent per annum prevailed in the series during 1873/74-1889/90. In fact, much of this growth was due to the modern jute mills in Bengal. Secondly, Australia and New Zealand together constituted the most important outlet for such products, sharing about 37 per cent of the market. It was followed by Strait Settlements, the United States of America, the United Kingdom and China. Their market shares were in the order of 14.61 per cent, 12.30 per cent, 9.75 per cent and 9.15 per cent. Thirdly, and most importantly, the market grew very fast in 1887-88, notably at 46.27 per cent, attaining a value of Rs. 23.33 million, and remained buoyant in the following year also. Most interestingly, the growth was impressive for the UK market also. Never during 1873/74-1887/8 had Bengal exports to that market crossed the value of Rs. 1.45 million per annum. But it became Rs. 3.52 million in 1888-89 and Rs. 5.07 million in 1889-90. The rates of growth in these two years were 647 per cent and 44.10 per cent respectively. These statistics signify that the Dundee mills must have started to collapse from 1888-89 onwards in the face of competition from Bengal mills.

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<sup>34</sup> For the quantity series of these data, see Annexure 4.1

<sup>35</sup> Moral and material progress, 1878, vol.-57, p. 59

Table 4.7: Value of export of bags from Bengal to different foreign ports during 1873-1890

(in Rs.)

Year	United kingdom	United states	Australia and New Zealand	Strait Settlement	Egypt	China	Cape of Good Hope	Ceylon	Other countries*	Total
1873-74	21,685	240,466	836,130	476,595	39,637	50,344	31,237	126,719	109,518	1,932,331
1874-75	9,972	50,862	489,122	1,302,947	21,510	115,893	3,950	194,656	9,902	2,198,814
1875-76	199,237	409,305	1,630,002	1,150,286	502,896	141,971	6,518	191,920	101,915	4,334,050
1876-77	392,564	1,830,949	2,004,571	703,545	445,454	- 761,903	9,091	102,697	142,879	6,393,653
1877-78	120,591	797,947	2,981,862	1,616,342	766,757	323,213	64,966	89,588	187,869	6,949,135
1878-79	1,840,274	1,444,311	3,046,808	1,443,143	583,063	1,105,761	174,659	52,218	412,731	10,102,968
1879-80	924,522	1,391,191	3,515,349	1,869,372	721,693	1,876,759	197,253	40,977	546,654	11,083,770
1880-81	935,292	2,631,363	3,133,384	1,226,955	465,410	1,221,717	446,990	43,691	550,459	10,655,261
1881-82	29,592	905,884	6,116,059	1,500,959	158,603	1,287,022	264,393	34,721	345,437	10,642,670
1882-83	209,918	1,686,932	7,427,239	1,895,141	190,304	1,746,365	222,069	26,882	577,027	13,981,877
1883-84	591,250	1,883,889	4,078,903	1,733,381	441,598	1,825,136	485,047	99,714	1,149,790	12,288,708
1884-85	1,223,127	2,214,836	4,761,125	2,735,651	708,667	756,137	229,957	150,335	1,114,620	13,894,455
1885-86	1,238,886	1,378,994	3,131,033	1,151,445	706,740	461,120	372,955	50,958	1,043,416	9,535,547
1886-87	1,431,880	1,808,586	2,586,616	1,106,769	537,430	1,051,281	329,549	64,929	1,511,831	10,428,871
1887-88	471,552	1,650,376	7,701,675	2,286,432	383,461	1,052,656	623,778	63,932	1,720,175	15,954,037
1888-89	3,520,808	1,727,646	7,914,544	2,804,587	687,587	1,747,281	999,007	68,007	3,865,870	23,335,337
1889-90	5,073,408	953,976	6,748,019	2,313,335	820,203	1,568,229	997,803	107,716	4,609,866	23,192,555
<b>Average</b>	<b>1,072,621</b>	<b>1,353,383</b>	<b>4,006,026</b>	<b>1,606,876</b>	<b>481,236</b>	<b>1,005,458</b>	<b>321,131</b>	<b>88,804</b>	<b>1,058,821</b>	

\*Austria, France, Italy, Malta, Russia, Turkey, Mauritius, Aden, South America, Natal, Japan, Java, Maldives, Persian Gulf and others.

Source: Annual statement of the sea-borne trade of Bengal with foreign countries during 1873/74-1889/90.

Compared to the market of bags, the market of cloth was much less extensive for Bengal jute mills. Table 4.8 displays a time series of its export to different foreign ports during 1875/76-1889-90 (for the quantity series, see Annexure 4.2). The most important outlets for this product were the United States of America and the United Kingdom, which together accounted for 77.08 per cent of the market on average during the period.

Table 4.8: Export of jute cloth from Bengal to foreign ports, 1875-1890.  
(in Rs.)

Year	United Kingdom	United States	Other Countries	Total
1875-76	216,504	144,475	86,513	447,492
1876-77	162,411	377,273	154,128	693,812
1877-78	18,081	298,237	38,852	355,170
1878-79	194,189	261,176	62,691	518,056
1879-80	110,271	177,178	319,544	606,993
1880-81	21,065	303,449	181,272	505,786
1881-82	187	44,992	71,646	116,825
1882-83	62,537	237,205	239,094	538,836
1883-84	123,420	292,123	325,356	740,899
1884-85	330,290	807,696	160,334	1,298,320
1885-86	403,372	799,261	225,368	1,428,001
1886-87	156,936	625,691	192,225	974,852
1887-88	77,525	810,641	259,975	1,148,141
1888-89	452,232	760,601	289,166	1,501,999
1889-90	1,073,124	2,058,120	783,562	3,914,806
Average	226,810	533,208	225,982	985,999

Source: Annual statement of the sea-borne trade of Bengal with foreign countries during 1875/76-1889/90.

This table also underlines the decline of Dundee mills against the competition of Bengal mills. The series of total export shows that there was an irregular declining trend in it, reaching at a nadir of

Rs. 116,825 in 1881-82. In that year, Great Britain imported only Rs. 187 and the USA Rs. 44,992. Possibly that was the peak period of development for Dundee mills. But Bengal mills started marching ahead since then, both in aggregate and individually in the UK and the USA<sup>36</sup>. The series rose from Rs. 0.12 million to Rs. 1.50 million in aggregate, from Rs. 187 to Rs. 0.45 million in the UK and from about Rs. 45,000 to Rs. 0.76 million in the USA, all in the duration of 1881/82-1888/89. Moreover, similar to the markets of bag, these markets for cloth expanded astonishingly in 1889-90. The rates of growth in them are worked out at about 161 per cent, 137 per cent and 171 per cent, respectively. These statistics certainly signify the competitive failures of Dundee mills by the end of the 1880s against the development of jute industry in Bengal.

### III

Not only did Bengal mills defeat their counterparts at Dundee in foreign markets, but they could successfully compete in the British domestic market as well. Bengal first captured her domestic yarn market. Although it represented the decline of an important segment of the industry, it helped the weaving branch to be more cost-effective since yarn became available at lower prices. Table 4.9 shows the import of jute yarn in the United Kingdom during 1875-1904.

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<sup>36</sup> *Moral and material progress, 1886-v-49*, p. lv

Table 4.9: Import of jute yarns from different countries into U.K

Year	Quantity (million lbs)	Value ( '000 £)	Price (£ per lbs)	year	Quantity (million lbs)	Value ( '000 £)	Price (£ per lbs)
1875	1.62	55	33.95	1890	4.22	97	22.98
1876	1.71	61	35.67	1891	3.02	95	31.45
1877	1.03	38	36.89	1892	1.96	52	26.53
1878	0.75	28	37.33	1893	1.55	50	32.25
1879	2.40	76	31.66	1894	2.13	54	25.35
1880	4.85	163	33.60	1895	2.62	70	26.71
1881	2.32	76	32.75	1896	3.03	43	14.19
1882	1.41	45	31.91	1897	5.08	61	12.00
1883	1.57	48	30.57	1898	4.18	54	12.91
1884	2.53	85	33.59	1899	3.58	46	12.84
1885	8.09	297	36.71	1900	6.34	89	14.03
1886	3.95	125	31.64	1901	8.39	107	12.75
1887	2.56	67	26.17	1902	5.17	70	13.53
1888	3.65	114	31.23	1903	4.98	84	16.86
1889	3.42	97	28.3	1904	4.21	76	

Source: Report of tariff commission, 1905, vol.2, p. 3788.

The import of jute yarn is thus found to have increased in quantity from 1.62 million lbs. in 1875 to 4.85 million lbs. in 1880 and further to 8.09 million lbs. in 1885, and, in value term, from £55,000 to £163,000 and further to £297,000 in respective years. A falling trend, however, swept over both the series as Dundee lost its competitive edge in the weaving branch also. While we have already seen her export market to have been rapidly dwindling in this period, we will shortly see that its domestic market was also under serious threat around that period. Table 4.9 shows that the import of jute yarn fell from 8.09 million lbs. in 1885 to 4.21 million lbs. in 1904 in quantity, and in value, from £297,000 to £76,000 in the same duration, although some short-run revivals were there in between. Such a decline took place even where

there was a steady decline in the prices of imported jute yarns. The table shows that their average price fell from £36.71 per lbs. in 1885 to £12.75 per lbs. in 1901. These lower prices were possibly due firstly to the setback in the weaving section, and secondly, to the in-takes of inferior jute yarns since 1885. It should be noted that the majority of these imports in the UK was from the mills of Calcutta.

Table 4.10, indeed, highlights the dismal picture of Dundee's spinning branch of the jute industry.

Table 4.10: Growth of Dundee jute industry during 1874-1904

year	No. of factories				No of spindles	No of power looms
	Spinning	Weaving	Spinning & Weaving	Total		
1874	26	20	63	109	229,000	9,599
1878	26	39	50	115	219,000	11,288
1885	30	37	51	118	264,000	12,083
1890	25	37	51	113	279,000	14,107
1905	25	44	38	107	277,000	13,704

Source: Report of Tariff Commission, 1905, vol.2, p. 3788.

This table shows that the number of spinning mills at Dundee remained stagnant during 1874-78; although four such mills came up during 1878-85, five existing mills were closed down in the following quinquennium. In the next 15 years, the number of such mills remained static at 25. Severe depression also took place in those factories where both spinning and weaving were jointly undertaken. The table shows that the number of such factories declined steadily from 63 in 1874 to 38 in 1905. Possibly, some of them were subsequently converted into exclusive weaving factories so that a rising trend is noticed in the number of such

factories during 1874-1904. Insofar as the number of spindles and power-looms are concerned, the industry definitely witnessed a setback after 1890. During 1890-1905, the former declined from 279,000 to 277,000, and the latter from 14,107 to 13,704.

The weaving branch of the industry, however, met a setback in the domestic market from the 1890s. Table 4.11 displays the trend of jute goods import in the U.K. during 1897-1904.

Table 4.11: Imports of jute goods from different countries into U.K  
(in thousand £)

Year	Total imports	Re exports	Domestic consumption
1897	1,629	1,255	374
1898	1,593	1,227	366
1899	1,506	1,234	272
1900	2,151	1,673	478
1901	2,209	1,832	377
1902	1,995	1,589	406
1903	2,367	2,038	329
1904	2,208	1,920	288

Source: Report of tariff commission, 1905, vol.2, p.3740.

In 1897, the import of manufactured jute in the U.K. was £1.63 million, out of which £374,000 was absorbed in the domestic market, and £1.26 million were re-exported. While the level of domestic absorption varied in the range of £270,000- £400,000 during 1897-1904, the level of re-export increased steadily from £1.26 million to about £2 million during the same period. Britain's import of jute goods thus spoiled the export market of Dundee manufacturers. If we deduct the amount of re-export from the export series in Table 3.4, the U.K.'s

exports of domestically manufactured jute goods come to £847,000 in 1897, £569,000 in 1898, £202,000 in 1900, £2,000 in 1903 and £33,000 in 1904. These surely speak about a total eclipse of Dundee jute mills in the global market.

The comparative edge of competition between Bengal and Dundee mills is more clearly understood if we compare the export series of Bengal mills to the UK and that of Dundee mills to Bengal (vide Table 4.12).

Table 4.12: Estimated quantity of export of bag from Bengal and Dundee (in ton)

Year	Bengal's Export to U.K	Dundee's export to Bengal	Year	Bengal's export to U.K	Dundee's export to Bengal
1871-72	4,250	172,71	1878-79	N.A	212,12
1872-73	52	202,05	1879-80	N.A	237,97
1873-74	1,48	231,25	1880-81	N.A	231,94
1874-75	63	213,51	1881-82	N.A	246,44
1875-76	13,86	170,83	1882-83	N.A	296,89
1876-77	31,24	191,26	1883-84	38,898	367,90
1877-78	N.A	182,49	1884-85	117,995	254,07

N.B. \* Number of bag is expressed in terms of ton. The norm has been derived from the production figure of the Baranagar Mill in 1872-73 which is available both in terms of number of bags and in tons, notably 9.5 million bags and 16,000 tons in weight. Hence, each bag is equivalent to 16/9500 tons.

From the above table we see that during the fourteen years of 1871/72-1884/85 the total export of bags was 16,619,478 ton from Bengal as against 3,211,435 ton from Dundee to Bengal. Thus, Bengal mills could sell five times more in the UK than what Dundee mills could sell in Bengal. The given series in the table shows that the UK market for the mills in Bengal grew at 23.07 percent while it was only 3.36 percent

for Dundee mills in Bengal. The export of bags from Bengal to the UK is seen to have increased from 4,250 ton in 1871 to 117,995 ton in 1884-85 while that from Dundee to Bengal rose from 172,706 ton to 254,067 ton in the same duration. These signify that while the balance of trade in jute products was in favour of Dundee (by 168,456 tons) in 1871, it turned in favour of Bengal in 1884-85 with a surplus of 136,072 tons. That Dundee's decline continued relentlessly in the second half of the 1880s is learnt from the following table (Table 4.13). It shows that the import of bags suddenly fell from 43,080 pieces in 1885-86 to 10,022 pieces in 1886-87, a decline of 76.73 percent in a single year. In the next year, it sharply increased by 43.66 fold, but the final end came thereafter. In 1888-89 only 50 bags were imported from Dundee and it became zero in 1889-90. Similarly, the import of cloth amounted to 487,447 yards in 1885-86 but only 235,785 yards in 1886-87, a decrease of 51.62 percent in a single year. Bengal took a larger amount of cloth in 1887-88 but there was a 6.64 percent fall during the following quinquennium. The import of rope, twine and other jute goods also fluctuated in these periods. There was a 0.23 percent rate of decline in the imports of rope and twine, and a 9.53 percent fall in that of other jute goods over the period. For the aggregate imports, the value was Rs.160,470 in 1885-86 but Rs.114,090 in 1889-90. This clearly indicates that Bengal's market had totally declined for Dundee products.

Table 4.13: Import of jute articles from Dundee to Bengal, 1885-89

Year	Bag		Cloth		Rope and twine		Others		Total value (Rs.)
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	
	(no)	(Rs.)	(yard)	(Rs.)	(cwt)	(Rs.)	(cwt)	(Rs.)	
1885-86	43,080	14,800	487,447	120,520	423	15,490	258	9,660	160,470
1886-87	10,022	3,240	235,785	67,650	544	14,040	54	3,230	88,160
1887-88	437,606	75,750	498,290	124,990	409	12,730	192	4,530	218,000
1888-89	50	20	344,989	89,790	446	14,140	152	6,950	110,900
1889-90	0	0	352,551	92,300	428	14,430	135	7,360	114,090

Source: Moral and material progress, 1890-91, vol.58, p. 200

Bengal mills, on the other hand, continued their strides in the British market during the second half of the 1880s. Table 4.14 shows that the export of bags increased from 7.25 million in 1885-86 to 21.59 million in 1889-90 in quantity, and from Rs. 1.24 million to 5.07 million in the same years in value, signifying annual growth rates of 49.44 per cent and 77.22 per cent, respectively. Likewise, the export of cloth was amounted to 5.12 million yards and 10.63 million yards in quantity, and Rs. 0.40 million and Rs. 1.07 million in value, in the respective years, with the annual rates of growth at 26.90 per cent and 41.88 per cent, respectively. The aggregate value of Bengal's export to the UK achieved a 72.40 per cent rate of growth through an increment from Rs. 1.64 million to 6.39 million during 1885/86-1889/90.

Table 4.14: Value and quantity of export jute manufactured from Bengal to the UK

Year	Bag		Cloth		Others		Total value (Rs.)
	Quantity (no)	Value (Rs.)	Quantity (yard)	Value (Rs.)	Quantity (cwt)	Value (Rs.)	
1885-86	7,248,329	1,240,390	5,118,193	401,190	865	3,230	1,644,810
1886-87	7,235,393	1,431,890	2,179,066	156,940	335	1,620	1,590,450
1887-88	2,977,925	558,050	789,754	77,530	2,210	11,950	647,530
1888-89	14,731,529	3,524,400	4,328,440	425,240	2,825	28,820	3,978,460
1889-90	21,591,413	5,073,410	10,628,379	1,073,120	16,918	239,480	6,386,010

Source: Moral and material progress, 1890-91, vol.58, p. 200

When Bengal mills could defeat their Dundee counterpart, there was no question of their looking back again for them. Table 4.5 shows that both in their domestic and foreign markets they marched ahead. Their sale of bags increased from 21,640,648 in 1875-76 to 49,841,506 in 1890-91 in the domestic market and from 17,554,904 to 95,507,129 in foreign markets in the respective years. The underlying growth rates in these respective series were 8.69 per cent and 29.60 per cent. By the beginning of the 1890s Bengal thus became the leader of global jute industry.

#### IV

It thus appears that the industry witnessed a slow, modest growth in the initial years. But because of its organisation, the industry under the managing agency system enjoyed benefits such as a) that adequate funds could be mobilised smoothly, b) that the overhead cost was minimised because of scope of economics, c) that there were substantial economics of scale. The industry also enjoyed cost advantages because of i) the abundance of land and water in this province, ii) lower transportation cost, and iii) easy availability of coal from the nearby Asansol-Raniganj coal field.

Although Bengal's traditional jute industry dominated the market over its modern counterpart, with their respective ratio at 59.54

percent: 40.46 percent in 1869-70, the scenario was reversed thereafter. In 1870-71 Bengal mill's came to occupy 50.42 percent of aggregate export outside the province, and it increased to 95.84 percent in 1890-91. Destination-wise, however, we have found that India's domestic parts occupied the lion's share of Bengal's jute-product market till 1878-79. The four ports, namely Bombay, Madras, Rangoon and Akyab, took the bulk consignments from Bengal during 1863-72. The foreign ports came into dominance thereafter. The shares of markets between foreign and domestic ports were in the ratio of 69:31 in 1878-79 but 67:33 in 1884-85. It further rose to 64:33 in 1890-91. The course of market penetration by Bengal mills were as follows: They first captured India's domestic market from the traditional industry, and then proceeded to the markets lying in the Far East before finally entering other continents. In the markets of the Far East and other continents Bengal mills encountered competition mainly from Dundee mills that had earlier captured those markets from Bengal's traditional industries to a good extent. Bengal mills defeated their counterparts of Dundee not only in the latter's foreign markets but also their domestic markets. During 1871/72-84/85 the total export of bags was 16,619,478 ton from Bengal as against 3,211,435 ton from Dundee to Bengal. As a result, Dundee mills were forced into a phase of decline around the concluding decade of nineteenth century.

Annexure 4.1: The quantity of export of bags from Bengal to different foreign ports during 1873-1890  
(in number)

Year	United Kingdom	United states	Egypt	China	Australia and New Zealand	Strait Settlement	Ceylon	Cape of Good Hope	Other countries*	Total
1873-74	8,8135	1,898,500	122,300	199,900	1,650,655	1,568,788	437,240	113,300	461,249	6,540,067
1874-75	37,546	332,100	78,500	631,110	1,378,775	4,393,169	686,650	18,500	67,167	7,623,517
1875-76	823,179	2,962,747	1,300,339	941,015	5,742,910	5,661,990	856,995	36,500	480,047	18,805,722
1876-77	1,874,893	12,768,079	1,169,649	5,331,723	6,984,210	3,303,225	496,900	29,912	609,670	32,568,261
1877-78	496,496	4,695,800	1,707,944	2,104,628	8,589,122	6,364,838	317,704	144,642	732,795	25,153,969
1878-79	7,107,141	11,002,524	1,507,101	7,482,731	8,501,290	6,090,249	196,707	492,887	1,521,629	43,902,259
1879-80	4,584,181	10,340,350	2,086,676	13,419,868	12,266,990	9,247,123	178,028	692,850	2,059,188	54,875,254
1880-81	4,57,808	19,150,818	1,256,625	8,706,275	9,637,446	5,608,921	154,500	981,319	2,382,137	47,878,041
1881-82	106,520	6,099,500	360,400	9,948,610	16,438,134	6,399,812	118,392	719,050	1,124,682	41,315,100
1882-83	819,450	10,744,600	482,970	13,444,150	21,867,802	8,871,404	103,506	629,250	2,360,441	59,323,573
1883-84	2,309,618	18,002,311	1,230,407	14,669,343	12,543,178	8,835,805	468,900	1,190,078	5,113,263	64,362,903
1884-85	7,006,000	23,003,830	2,268,707	6,677,010	18,303,700	17,572,077	758,455	737,378	5,682,447	82,009,604
1885-86	7,240,829	16,871,825	2,965,995	4,536,799	15,426,964	7,480,061	264,250	1,469,333	5,928,575	62,184,631
1886-87	7,235,393	18,301,280	2,074,990	9,847,732	10,261,912	6,685,425	329,650	1,058,037	8,082,144	63,876,563
1887-88	2,570,525	15,310,163	870,124	8,701,293	22,235,979	12,968,083	250,773	1,627,071	8,445,604	72,979,615
1888-89	14,731,279	13,096,100	1,761,057	14,779,140	21,211,662	13,238,327	279,900	2,665,400	15,143,758	96,906,623
1889-90	21,591,408	6,133,100	2,010,100	10,722,950	21,027,153	11,077,648	452,000	2,736,100	19,562,790	95,313,249
<b>Average</b>	<b>4,913,912</b>	<b>11,218,449</b>	<b>1,367,876</b>	<b>7,773,193</b>	<b>12,592,228</b>	<b>7,962,761</b>	<b>373,562</b>	<b>902,447</b>	<b>4,691,623</b>	

\*Austria, France, Italy, Malta, Russia, Turkey, Mauritius, Aden, South America, Natal, Japan, Java, Maldives, Persian Gulf and others.

Source: Annual statement of the sea-borne trade of Bengal with foreign countries during 1875/76-1889/90.

Annexure 4.2: Export of cloth from Bengal to foreign ports, during  
1875-1890 (in yards)

Year	United Kingdom	United States	Others	Total
1875-76	2,250,401	1,750,292	704,758	4,705,451
1876-77	1,397,192	3,347,247	1,264,120	6,008,559
1877-78	151,740	2,500,332	311,997	2,964,069
1878-79	1,823,628	2,259,058	504,135	4,586,821
1879-80	1,039,000	1,682,530	2,489,226	5,210,756
1880-81	170,954	2,564,500	1,484,110	4,219,564
1881-82	1,500	366,200	607,411	975,111
1882-83	400,300	2,150,600	2,054,414	4,605,314
1883-84	948,138	2,879,200	3,069,692	6,897,030
1884-85	3,456,459	10,456,316	1,463,342	15,376,117
1885-86	5,118,193	12,793,610	2,172,785	20,084,588
1886-87	2,179,066	8,793,200	1,778,877	12,751,143
1887-88	789,754	10,469,100	2,321,972	13,580,826
1888-89	4,328,400	7,492,176	3,197,595	15,018,171
1889-90	10,628,379	19,721,200	6,585,955	36,935,534

Source: Annual statement of the sea-borne trade of Bengal with foreign countries during 1875/76-1889/90.