CONCLUSION

Technology and Forms of Labour

In the cotton industry there was progress in technology marked particularly by intermittent and limited technological development and few significant breakthroughs in medieval times such as the draw-loom, block printing, carpet-weaving, sericulture, and mortar-and-lime indigo vats (confined to north India). Our study also shows that pace of technological diffusion in the textiles sector in pre-industrial times, was quite varied. While India was a source of certain textile tools, along with the principles of technology, like the ancient cotton-gin involving the earliest known example of application of parallel worm gearing, and the carders’ bow string device. On the other hand, it received spinning wheel, treadles in the loom, draw-loom, block-printing, sericulture, indigo-boilers from outside. Manufacture of cotton was diffused to China from India first in the 6th century AD, and in the second phase in the 13th century AD. Similarly, manufacture of cotton was possibly conveyed from India to Britain in the 16th Century AD, probably as part of the so-called ‘new draperies’ transition. Ever since Britain received it, the consequences proved to be drastic eventually leading to the Industrial Revolution.


2. Ibid. See also K.N. Chaudhuri, The Trading World of Asia and the English East India Company, 1660-1750,
The textile crafts were carried on mostly in villages up to the stage of spinning. Until in the sixteenth century spinners were largely confined to villages. The famous poet Mukundram Chakkrabarti Kabikankar (16th century) does not refer to spinners in towns in the long list of various craftsmen. This is not to suggest that spinners were not to be found in urban centres. The introduction of spinning wheel (13th-14th centuries AD) had enhanced the feasibility of production of increased quantity of spun-yarn, since the spinning wheel should have increased yarn production six-fold within the same labour-time. This device possibly facilitated the rise of specialised spinners based in towns along with their village-based counterparts, as was noticed by Duarte Barbosa. It has rightly been pointed out that in the customary gender-division of labour

Contd....
pp.272-275 for an excessively negative assessment of Indian textile technology.

3. Cf. Irfan Habib, Agrarian System of Mughal India 1556-1707, pp. 63-64. See also Sanjay Subrahmanyan, “Rural Industry and Commercial Agriculture in Late Seventeenth Century South-Eastern India”, Past and Present, 126, Feb. 1990, pp.76-114; see also Vijaya Ramaswamy, Textiles and Weavers in Medieval South India, pp. 101-103, 141-144.


many of the harder and arduous parts of the work were assigned to women. There are numerous references to them. Spinning yarn attracted an increasing number of people of different castes. Spinning was pursued by women of both low as well high castes. Women of Brahman castes also spun yarn especially in Bihar and Bengal, though not in southern India where women of Brahman castes could not take to it.

The use of a special kind of cotton by the spinners mostly women of Dacca and districts around it has been considered responsible for the production of the muslin thread. We have seen that the cotton of India was derived mainly from two species (as discussed in Chapter 1.), the reason could not be as much in the quality of cotton as in the technology of spinning. Specialised spinners were required to produce very thin yarn for the famous Dacca muslin and the finest yarn was spun with needle like bamboo spindles rotated on pieces of hollow shells. The wheel, on the other hand, was employed for coarser cotton fabrics. It is interesting


8. Ibid.


to note that in Bengal the superior quality threads were spun by women of higher castes, including Brahmans, whereas the coarser thread was spun by women of the common peasants "who could not spin fine thread because their fingers were rendered stiff by hard work".

Gender-division in textile craft is also reflected in an Ajanta fresco (Plate I) and other literary evidence. They invariably refer to the involvement of women in all the processes preceding weaving, e.g. women cleaning cotton through roller-and-board method and cotton-gin, spinning of cotton, all shown in the same Ajanta fresco. Spinning by women continued in medieval times. However men also started separating cotton seeds from cotton, as shown by Miftah-ul-Fuzala illustration of the device Chobkin. Similarly carding of cotton with a bow string device became a part of paraphernalia of a male itinerant carder. It has rightly been pointed out that women's role in the textile industry extended not only to helping the weaver (usually male) to set up loom and warp and weft, but


12. See Pl. I.

13. For 13th-14th to 16th century, see Irfan Habib, "Exploring Medieval Gender History" p.2; for 17th century see Chapter 1. in the present thesis pp.60-63.

14. See Pl. II.

15. See Pls. IV & V.
also to dyeing, printing, painting and embroidering cloth.16

Wouter Schouten (1676) found women operating looms, a supposedly male prerogative. Schouten writes, “Yet only the men but also the ladies in these countries (he is speaking of the Coromandel coast) know how to operate the weaving loom and then earn (still in a better way) their livelihood.”17 Thus the entire burden of labour in the textile crafts was shared by males along with females.

The Social Framework

So far caste system’s influence on textile artisans during 16th-17th century is concerned, it seems that there was no rigid barrier to adoption or adaptation in textile industry. There are instances of simple “skill compensation” from the textile industry itself. For example, Irfan Habib has cited instances of dexterity by artisans of Dacca in producing the famous Dacca muslin and weaving embroidered shawls on simple looms instead of the draw-loom specifically used for such designs in Iran.18 By the Mughal times there was a kind of super-abundance of cheap skilled labour created by centuries of “commodity or market oriented

17. Wouter Schouten, Oost-Indische Voyagie, Amsterdam, 1676, p.294.
18. Irfan Habib, “Capacity of Technological Change in Mughal India”, in Aniruddha Ray and S.K. Bagchi, eds., Technology in Ancient and Medieval India, Delhi, 1986, p.7.
This has been considered a major factor responsible for the development of extreme specialization and multiplicity of professions.\(^{20}\) It seems that the caste system contributed also to the evolution of craft specialization in textile industry. Babur speaks of caste-based transfer of acquired knowledge of a craft. He writes, “... every artisan there (Hindustan) follows the trade that has come down to him from forefather to forefather.”\(^{21}\) At another place enumerating the advantages of Hindustan, he writes, “Another good thing in Hindustan is that it has unnumbered and endless workmen of every kind. There is a fixed caste (jami) for every sort of work and for every thing, which has done work or that thing from father to son till now. ... In the same way there are numberless artisans and workmen of every sort in Hindustan.”\(^{22}\)

Edward Terry (1616-19) refers to the hold of caste system. He writes, “And so among all the Gentiles the men take the daughters of those to be their wives which are of their fathers tribe, sect and occupation [emphasis

19. Ibid.


22. Ibid., p.520.
added]; for instance, a merchants sonne marries a merchants daughter. And every mans sonne that lives by his labour (emphasis added) marries the daughter of him that is of his owne profession; by which meanes they never advance themselves [emphasis added].”

Pelsaert (1627) refers to three ways in which heathens (i.e. Hindus) especially ‘Banias’ earn their livlihood. First of all they were the best merchants and jewellers. Second, they were mostly the artisans because all the handicrafts were made mostly by heathens, and very few by the Muslims, besides dyers and weavers. His observation that in few places Hindus pursued dyeing and weaving and everywhere, and also sometimes Muslims suggests that despite caste rigidities among the Hindu artisans, Muslims could also take to this craft.

Pelsaert refers to the precarious condition of many artisans. But they accepted their miserable poverty and professed that they did not deserve anything better. They had no hope of improving their condition, “because a workman’s children can follow no occupation than that of their father, nor can they inter-marry with any other caste.” Though he

23. Early Travels, p.322.


26. Ibid.
identifies three groups of people who were indeed nominally free, but whose status did not differ much from voluntary slavery. They were artisans, peons or servants and shopkeepers. He writes that there were two kinds of scourges, namely low wages and forced labour. Goldsmiths, painters, embroiderers, carpet makers, cotton or silk weavers, blacksmiths, coppersmiths, tailors, masons, builders, stonemasons, a hundred craft in all, many of these by working from morning to night could earn only 5 or 6 taka (possibly dams), that is 4 or 5 pennies in wages. Secondly the governor, nobles, Diwan, Kotwal, bakhshi and other administrative officers could force them to work for them on half payment. This reduced them to abject poverty.

Like Pelsaert, Wollebrandt Geleynssen de Jongh (1632-1636) observed that “in Gujarat among the banias there are many dyers, beaters of cloth (ljiwaet kloppers?) and those who perform the work of peasants, ploughing and sowing, also many artisans like carpenters, smiths, shoe makers, tailors and many more artisans, though they are not so rigorously

27. Ibid.
28. Ibid.
29. Ibid., pp.308-309.
30. Ibid.
32. Ibid.
tied to their law as those who earn their livelihood through trade, they are also considered the best and purest of the Banias. In short, know that they earn their livelihood in all things according to their caste or lineage (geslachte), because everyone must pursue such means of livelihood as their elders and race (generation) had done, to wit, a carpenter’s son necessarily be a carpenter and marry the daughter of a carpenter, similarly a smith, carver, shoe maker, weaver, and so forth, wherein each must remain and marry, as his caste determines, and if someone does not marry in his own caste, he is despised, and is considered disgraceful.”

Similar kind of caste rigidity among the practitioners of textile crafts as well as others is reflected in P.V.D.B.’s (1677) account of Indian society. He writes, “There are various races (i.e. castes), which remain in one work, there are chettis who are merchants, there are also market porters and the like; there are some of the painters’ caste, also merchants, by which one has no success, but this is the custom of the country, that weavers ‘children will learn weavers’ crafts, and such is (the caste) with all, smiths bring smiths, carpenters, brazier, and casters (gieter), silver smiths, each furthers his craft, . . . .”

Subsequently, Weber observed that professional castes, particularly those of textile crafts, were “the very pillars of rigid caste segregation and tradition alongside pure peasant castes, for which a rigid


34. P.V.D.B., p.49.
traditionalism goes without saying." This proves a social barrier in the path of intercraft mobility of professional skills and diffusion of techniques. However, Morris D. Morris questioned the validity of Weber's arguments and asserted that there were no specific instances of rejection of any technique by Indian craftsmen on the basis of their caste ritual or traditions. Sabyasachi Bhattacharya comes closer to Weber when he considers the question of textile artisans' adoption of European silk filature, and the cotton ginning machine. He held that the adoption of new technology would have implied extraneous control over the artisans' process of production and in the process he would loose his independence. In other words, he also considered the artisans' psychology as an important factor inhibiting the rapid diffusion of a

39. Ibid.
superior technological device.\textsuperscript{40} And these psychological reasons were possibly because of the control, rigidity and segregation of skills by caste system.

However, the extent of caste determinism should not be over-emphasised. Irfan Habib has questioned the rationality of application of the role of the caste system in Indian society.\textsuperscript{41} In practice, the artisans based on the caste system faced a challenge from the mass of ordinary or unskilled people who formed a reserve and from whom new classes of skilled professions might emerge when the situation demanded. Secondly, there is no evidence to prove that weavers were "eternally fixed in their attachment to single professions or skills". For example we hear of radical transformation in the caste status of some artisans in the 16\textsuperscript{th} century. We hear of Ramdas, a master dyer of Akbar who presumably combined his professional occupation of dyeing along with possessing 37 bighas of land for cultivation.\textsuperscript{42} Then, there are illuminating accounts of Kabir (a weaver), Dadu (a cotton-carder), Namdev (a calicoprinter), Ravidas...

\textsuperscript{40} For a critique of such a stimulating argument, see Harbans Mukhia, "Social Resistance to Superior Technology: The Filature in Eighteenth Century Bengal", \textit{I.H.R.}, XI(1-2), 1984-85, pp-56-64. Mukhia explains that resistance to filature lay in economic reasons and not socio-psychological factors.

\textsuperscript{41} Irfan Habib, "Potentialities of Capitalistic Development in the Economy of Mughal India", pp.216-217.

\textsuperscript{42} Irfan Habib, "Three Early \textit{farmans} of Akbar, in favour of Ramdas, the Master Dyer", p.274.
(a barber) and Nanak (a petty grocer) all of whom belonged to the artisanal castes and sub-castes (*jatis*) but sought equality with upper castes not by seeking mythological origins or claiming ritual purity, but by rejecting the caste system.\textsuperscript{43} Similar views are expressed in early seventeenth century composition of Guru Arjan (died 1606).\textsuperscript{44}

Vijaya Ramaswamy has brought out the fact that unlike the artisans of north India, there was an upward movement among most of the Sudra professional groups such as smiths, weavers and oil pressers in South India. They were not satisfied with the low place assigned to them in caste hierarchy on account of accumulation of wealth and extraction of social privileges. Unlike their northern counter-parts, who believed in negation of caste system, the artisans of southern India sought mythological origins and status of Brahmans. In other words, they aspired for caste exaltation and not caste negation.\textsuperscript{45}

S. Arasaratnam speaks about considerable mobility among weavers, both geographically and socially. The major weaving castes had


\textsuperscript{45} Vijaya Ramaswamy, *Textiles and Weavers in Medieval South India*, p.115.
moved and spread out of their original homelands and still maintained their links through territorial ties and through common ritual and worship centres. S. Arasaratnam has cited examples of artisans moving into, and out of weaving as an occupation, and the splintering of weaving castes on the basis of specialization. Caste weavers also subsisted on agricultural pursuits. There are, however, instances of weavers who specialized in textile trading or farming as their sole occupation. Besides, there were other occupational castes like those of fishermen and landless labourers of untouchable castes, who opted for weaving as a profession. The occupational mobility was caused possibly by unusual expansion in demand for textiles both for internal consumption and export.

Some of S. Arasaratnam’s conclusions are based on facts reported from the 18th and 19th. Hence they do not constitute very firm evidence for understanding caste mobility in the previous centuries. His suggestion that fishing and farm labour also opted for weaving also needs attestation from contemporary sources. Our own study of some contract documents

46. S. Arasaratnam, pp.216-217, 265-68.

47. S. Arasaratnam, pp.266-267. It confirms what Barrington Moore Jr. had observed about Moreland that he in his detailed descriptions of “Mogul Society” had very little to say about the caste system, which was flourishing at that time since centuries. This arose possibly because of Moreland’s dependence on Mughal administrative documents and travellers’ accounts whose focus was not the village community, where caste was the basis of division of labour. Moore also complains about Irfan Habib’s Agrarian System of Mughal India (1st edition) touching “lightly on caste, though somewhat more than Moreland”, see Barrington Moore Jr., Social Origins of Dictatorship and Democracy, 1st pub., New York, 1966, rep. Middlesex, 1967, Peregrine Books, 1979, pp.317-18.
signed between the Dutch East India Company and painters/printers and weavers, do show, however, that many people from the caste of weavers and painters/printers had taken to mercantile activities.\(^\text{48}\)

Thus one can safely say that castes could change their established professions. This is attested in the earlier part of 18\(^{\text{th}}\) century: from Maharashtra. Some members of a caste of tailors moved to dyeing and others to indigo dyeing.\(^\text{49}\)

There was already a large reserve of Muslim artisans and labouring communities in the 16\(^{\text{th}}\) and 17\(^{\text{th}}\) centuries\(^\text{50}\) created since the establishment of the Sultanate. In the early 17\(^{\text{th}}\) century Pelsaert refers to the presence of this section of the artisans in society when he refers to sources of livelihood of ordinary people. He writes, “Second (First were best merchants and jewellers) artisans, because all the handicrafts are made by the heathens and scarcely some by Muslims, that at some places are heathens but all are Muslims.”\(^\text{51}\) This section of the population was free from some of the rigours (not all) of the caste system and not subject to

\(\text{48. See Chapter 9.}\)

\(\text{49. Irfan Habib, “Potentialities of Capitalistic Development in the Economy of Mughal India”, p.217.}\)

\(\text{50. Irfan Habib, “Non-agricultural Production and Urban Econmy”, in Tapan Raychaudhuri and Irfan Habib, eds., TheCambridge Economic History of India, pp.89-93.}\)

\(\text{51. Pelsaert, p.327.}\)
any insurmountable obstacle to occupational mobility. The presence of sizeable section of Muslim weavers and artisans could have contributed to mobility and competition among artisans along with introduction of new techniques. This is possibly the reason that we hear about an agreement between the cloth and yarn merchants in a Tamil inscription of 1538. It states, “... while we are assembling here ... in the course of weaving by handlooms, one third of the Sadisarakkudam or achchukkattu should be drawn lengthwise and two third of the cotton yarn should be used in cross-wise weaving. This mode of weaving should be done only by the Muslims (and not by the Hindus). As a reward for their services (ostensibly in acknowledgement of their newly introduced craft) they were authorized to collect the income from the gifted lands for their weaving.”

Similarly, in 1679 Streyensham Master reported that at Ellur (A.P.) the manufacture of woollen carpets on vertical looms with coloured woollen weft threads, in accordance with patterns set on paper, was introduced a century earlier by Persian (i.e. Muslim) artisans.

This evidence suggest the role of caste was hindered by the presence of new set of artisans in Muslims and their association with new technologies which they introduced into India. Occasionally Mughal


administration also played a crucial role in limiting the role of caste system and encouraged occupational mobility for its own advantage. Aurangzeb ordered that at Ahmadabad all persons who so wished should be allowed to learn the crafts of weaving, needle-making and embroidery. Such a situation is reflected in Geleynssen de Jongh’s observation (1629) about Ahmedabad. He writes, “any merchant or artisan may come freely to reside here, earn his livelihood with his handicraft or business without molestation or contradicted by any ..........”

Therefore once occupational mobility is admitted, it has rightly been observed, that theoretical rigidity looses its teeth. Secondly, castes were weaker than guilds owing to a comparatively loose organization; and because of this reason they had to depend on administration for its support and also suffer its interference.

Thus, it is not to deny that caste system was not a social reality, but the contention that it had a substantial role in restricting the mobility


57. Irfan Habib, “Potentialities of Capitalistic Development in the Economy of Mughal India” p.217, especially footnote 142.
of labour and thus creating a scarcity of skilled labour may well be doubted.

**Forms of Production**

By and large the form of production may be defined as domestic. The artisan owned the basic tools like the loom with which he worked, procured yarn (cotton, or silk as the case may be), and dyes and then took the finished products to the near markets and sold it to the merchants.

Such conditions are best illustrated by reports on calico manufacture from Patna. Robert Hughes reported from Patna in July 1620: "... the usual custom of buying the amberty calicoes at Lackhoure (which the 'pente' or fair for that commodity, and is a town 14 course (kos) from this place) is as follows: there are daily brought in from the neighbouring gonges [ganj] by the weavers, from whom they are bought raw, of length 13 coveds 'Jehangery' (which is one-fourth longer than the 'elahye' of Agra), from which the buyer, of an ancient custom, 'teares' of 1½ or 2 coveds, and so delivers them marked to the whitster, who detains them in whiting and starching about three months, the charge whereof is near upon 3 ru [pees] per corge, and the abatements and disturys (dasturi) in buying them raw from the weavers 4/16 per rupee or 25 per cent. In this manner, by report daily may there be bought 50, 60 and some days 100 pieces. Almost in the like nature are they sold here in Puttana, being likewise brought thence by the weavers, but ready whited and cured, and the same customs and abatements as in the
country” (spellings modernized). In a subsequent report of 10 November 1620, he writes, “buying them [“amberty callicoes”] at the left hand, to say, from the weavers which bring them ready to town is only to serve the bazaar, and merchants that make their provisions abroad will not sell here for a halfe a savoye profitt”. In November 30, 1620, it was reported: “The amberty callicoes are made a day’s going from this place in a ‘prigonye’ (pargana) or ‘shier’ (shahar, town) called Lackhower, where they are to be bought of all prices, infinite quantities, from the poor weavers which make them, brown, wherof there are three sortes; the first narrow breadths, and are commonly called ‘rasseyes’, generally coarse, and few or none above two rup[ee]s net the piece of about half a yard broad and 13 yards long; the next sort are called ‘zefferconnyes’, and most may be one-fourth broader then the former, but much finer and of higher prices, from two to six rup[ee]s per piece; and the third and best sort the broadest and finest, known here by the name of ‘Jehangeres’, whereof some are a full English yard and few or none above; neither can the weavers conveniently make them broader (as they themselves say) to have them substantially and close woven. The best and cheapest course would be to buy them raw, and have them bleached afterwards”.


60. *E.F.I. 1618-1621*, p.213.
W. Geleynssen de Jongh (1630) writing about Broach, observed “the trade is conducted in cash because the weavers, who are poor people, cannot purchase on credit, know how to earn by working from dawn to dusk, there they usually regulate according to their reckoning and consumption; besides that there is no way to give credit to weavers, but on the contrary must give their money in hand, from that they purchase yarn first, from which they make cloth; and the money coming from that is paid for yarn.”

Production was thus strongly affected if the individual artisans were faced with the vagaries of the market. It seems that the famine of 1630-31 brought about considerable change in the structure of the textile industry, which was reflected in the mobility and the extent of adaptation by the artisans involved. Since the prices of foodgrains escalated, the weavers desperately speeded up their production to sell in the market. This led to further relative decline of prices of textiles. The entire payment was made partly or fully in food items. But this proved very expensive. Besides, there was large scale migration of weavers to Agra.


63. Ibid.

64. Ibid.

65. Ibid.
and Awadh on account of famine. But later they came back.\textsuperscript{66}

A similar situation was observed in Thatta. John Spiller complained in September 1647 that weavers at Thatta "are a company of base rogues, for notwithstanding we give them money aforehand ... part of year, and in the time of thence [their] greatest want, yet, if any pending cloth merchant comes to buy, they leave us and worke for him, though he gives no money aforehand; ..."\textsuperscript{67}

Such information is not available to us during the sixteenth century, and in the secondary literature there has been a curious lacuna, even in studies using Portuguese.\textsuperscript{68} For the 17\textsuperscript{th} century, however, our information confirming similar conditions of domestic production are confirmed by evidence from Bengal\textsuperscript{69} and the Coromandel coast.\textsuperscript{70} This mode of

\begin{itemize}
\item \textsuperscript{66} Ibid.
\item \textsuperscript{67} \textit{E.F.I.1646-50}, p.159.
\item \textsuperscript{68} e.g. K.S. Mathew, \textit{Portuguese Trade with India in the Sixteenth Century}; S. Jeyaseela-Stephen, \textit{The Coromandel Coast and Its Hinterland, Economy, Society and Political System (AD 1500-1600)}. See also Vijaya Ramaswamy, \textit{Textiles and Weavers in Medieval South India}, deals with improvements of weavers' class/caste position, but does not say anything about their production methods.
\item \textsuperscript{69} Cf. Om Prakash, p.98 (especially for the 17\textsuperscript{th} Century); Sushil Chaudhuri, \textit{From Prosperity to Decline: Eighteenth Century Bengal}, pp.155-175.
\item \textsuperscript{70} Cf. J.J. Brennig, "The Textile Trade of Seventeenth Century Northern Coromandel", pp.269-70.
\end{itemize}
organisation continued up to the first half of the 18th century.\textsuperscript{71}

\textbf{Merchants and Artisans}

The main lever of merchant's control over weavers was through the system of advances mostly in the form of money, or foodgrain or work-material, in order to ensure regular supplies.\textsuperscript{72} The report of 6 August 1620 says about weavers of Lakhawar: "Lackhower affords great quantities of fine cloth, to say of four, six, eight to ten rupees per piece, and by bespeaking them and delivering moneys out beforehand, the weavers will make them a full Jehanger coved broad which is yard, half quarter English . . ."\textsuperscript{73}

Though advances led to the subjection of weavers to the creditors' interests, this did not transform the basic position of weaver as an artisan. There are examples of weavers working for the European East India Companies sometimes had to adjust by altering the size of their looms. For example, it is reported that weavers at Lakhawar after receiving money in advance from merchants or the Company agreed to alter the size of the loom.\textsuperscript{74} It was reported in December 31, 1630 by President Rastell from Surat that the factors were instructed "to buy no cloth that is deficient

\textsuperscript{71} Alexander I. Tchitcherov, \textit{India, Changing Economic Structure in the Sixteenth to Eighteenth Centuries}, pp.52-55.

\textsuperscript{72} \textit{E.F.I. 1618-21}, p.197.

\textsuperscript{73} Ibid. Such examples can be easily multiplied.

\textsuperscript{74} \textit{E.F.I. 1618-21}, p.197.
in length or breadth, and to pay attention to ‘the close making and folding up of their broad and narrow baftaes,’ . . . [They] have ordered one Ahmadabad ‘duttyes and narrow baftaes . . . but with caution that by altering of the weavers’ looms they procure the long baftaes to be of equal breadths with those of Baroch, and their duttyes of full yard broad and 12 yards long.”75 President Breton reported to the Court of Directors of the English East India Company on 25 January, 1647 that weavers were not averse to changing the size of the looms but their major concern was the prospects of sale of those broad baftas woven according to the East India Company’s desired specifications. Breton reports that “these are not entirely satisfactory, either in quality or dimensions; but they cannot hold the weavers to stricter conditions, so unwilling are they to work upon that sort of cloth, which, if, after made, we refuse, remains upon their hands unvendible.”76 The English Company factors at Ahmadabad reported to the President and Council at Surat on 4th October, 1647, that, “From the specimen of ‘puttolaes’ sent, they now understand how what the Bantam factors call ‘puttola gobars’ should be made; but the workemen here, in consideration of the unusual breadth, demand a third more than is paid for the ordinary kind (emphasis added); so, unless they reduce their rates, inquiry will be made at Cambay or


Similarly the weavers of Agra and possibly Awadh were not opposed to such alterations for we hear from a report of 6 January, 1648 that says, “Taffetas, such as the patterns forwarded, may be procured in Agra in large quantities, but must be bespoken, as the dimensions are unusual. *The weavers do not object to the breadths required* [emphasis added], but refuse to make pieces more than ‘35 Agra covids-long, which is exactly 8/9ths of a yard, or 32 inches’. For these they demand 1-7/8 and 2 rupees per covid, if the quality is to be that of the Persian patterns, or 1½ rupees, if of the goodness of Agra taffates.” In another report of 31 January, 1649, it is reported that not been able to obtain the quilts and chints desired, but will provide some against next year. “This passed year we have continued a constant residency at Ckandiera, chiefly to induce the weavers by degrees to make their cloth of full dimensions; whereof you will receive a greater quantity than formerly”. In the Deccan also, it was found in 1659 that “Calicoes, the factors averred, might be had in large quantities; but the weavers had been so accustomed to making short dimensions only. . .”.

In 1663, there was inadequate procurement of textiles from Agra, and the Surat factory was urged to “cause our weavers to weave cloth of

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78. Ibid., pp.189-190.
the dimensions they use to be of; which we have propounded to them, but none will undertake it, except *we will first pay for the altering of their looms* [emphasis added], and also their own rates, which are so extravagant that we were quite discouraged, especially in regard there were few that would undertake it, they being full of other employments in weaving sundry sorts of goods for the markets of Mocha, Persia, Bussorah, Atchin etc. that, if we do not engage them by impressing moneys beforehand, we should not get half the calicoes we send you."^{81} In 1669, it was reported from Bengal that. "the sannoes, gingham's, etc. provided about this place cannot be made of lengths and breadths beyond those now sent, unless the price be augmented in a larger proportion than the dimensions; since use and custom amongst the weavers is not to be altered without a charge; they are so tenacious of and addicted to the way they have been brought up in . . .."^{82} In 1674 it was reported from Surat that, "the local weaving of cloth for the Company was affected by its preference for broad baftas. Augier explained that there might be difficulties about carrying out this order, as most of the looms in use were for making narrow baftas and it was difficult to alter this."^{83}

Thus, the independent weavers produced cloth for local and long distance markets, sold it himself, brought about changes in specifications

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by charging more money and sold it to the merchants, middlemen and European companies directly. What is still more interesting is that they were not opposed to alterations in the production of textiles.\(^\text{84}\)

Then there are numerous examples of weavers producing textiles on behalf of merchants and European East India Companies. Such organisation of production was necessitated by scarcity or high cost of raw material or requirement of fulfilling certain specifications at fixed rates and supply at stipulated times. In such an arrangement individual artisans or a group of weavers took money in advance on the condition of supplying within stipulated time and at fixed prices. This was possibly the most widely practised method of production. It has drawn the attention of many scholars and has also been discussed in Chapter 9 above.

**Pre-Industrial Manufactories**

The third prevalent form of organisation of production was akin to a manufactory.\(^\text{85}\) Abul Fazl tells us of the manufacture of special kinds of textiles for the use of emperor Akbar in imperial workshops (Karkhanas). Writing about carpets, he says: “His Majesty has caused carpets to be made of wonderful varieties and charming textures; he has appointed experienced workmen, who have produced many masterpieces. The *gilims*

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84. See also, A.J. Qaisar, *Indian Response to European Technology and Culture*, pp.83-84.

85. Marx has traced the features of this mode in *Capital*, I, pp.318-347.
of Iran and Turan are no more thought of, although merchants still import carpets from Goshkan, Khuzistan, Kirman, and Sabzwar. ... In the imperial workshops single *gilims* are made, 20 *gaz 7 tassujes* long, and 6 *gaz* and 11½ *tassujes* broad, at a cost of 1810 rupees, which those who are skilled in the business have valued at 2715 rupees."[^86] Thus such an expensive commodity like *gilim* witnessed a reduction in price by 150 per cent. Abul Fazl further writes, "The imperial workshops in the towns of Lahore, Agra, Fatehpur, Ahmadabad, Gujarat, turn out many masterpieces of workmanship; and the figures and patterns, knots, and variety of fashions which now prevail, astonish experienced travellers. His Majesty himself acquired in a short time a theoretical and practical knowledge of the whole trade; and on account of the case bestowed upon them, the intelligent workmen of this country soon improved. All kinds of wool-weaving and silk spinning were brought to perfection; and the imperial workshops furnish all those stuffs which are made in other countries. A taste for fine material has since become general, and the drapery used at feasts surpasses every description."[^87]

Though Abul Fazl does not describe their organization in detail, one can safely assume that they were definitely an exception to from


domestic system of production.

But the imperial workshops did not stand alone. There were private large workshops as well. For example, we have possibly one of the earliest examples of functioning of a workshop in Robert Hughes’ report of 6 August 1620. He reported from Patna, “the cheapest and surest dealing is to buy the serbandy and wind it of myself . . . and at present have thirty men at work thereon, proposing to increase them to a hundred, and if you approve thereof and the price (which is 1/3 cheaper than in Agra), I may have two or three hundred silkwinders to work in the house all the year.”

In September 1620 we find Hughes again writing, “I have increased my ‘Cor Conna’ (karkhana) to almost a hundred workmen; but here I will stop until I hear further from Surat.”

Bernier, writing in mid seventeenth century, has described for us these karkhanas in considerable detail. He says, “Large halls are seen in many places, called Kar-kanays (Karkhanas) or wokshops for the artisans. In one hall embroiderers are busily employed, superintended by a master. In another you see the goldsmiths; in a third, painters; in a fourth, varnishers in lacquer-work; in a fifth joiners, turners, tailors, and shoemakers; in a sixth, manufacturers of silk, brocade, and those fine muslins of which are made turbans, girdles with golden flowers, and


89. Ibid., p.198.
drawers worn by females, so delicately fine as frequently to wear out in one night. . ..”

Bernier is also helpful in understanding the nature of supply of labour to these imperial workshops. He writes, “The artisans repair every morning to their respective Kar-kanays, where they remain employed the whole-day; and in the evening return to their homes.” This suggests that the artisans did not work in their homes, and therefore the cooperation of the family, available under domestic production, was denied to him in this system.

The condition of artisans working in these manufactories was by no means much better than ordinary artisans. Bernier himself says: “No artist can be expected to give his mind to his calling in the midst of a people who are either wretchedly poor, or who, if rich, assume an appearance of poverty, and who regard not the beauty and excellence, but the cheapness of an article: a people whose grandees pay for a work of art considerably under its value, and according to their own caprice, and who do not hesitate to punish an unfortunate artist, or tradesman, with the korrah, that long and terrible whip hanging at every Omrah’s gate.” Bernier, however, pointed out that the protection was provided


91. Ibid., p.259.

92. Ibid., p.228.
by powerful patrons to rich merchants and traders who paid higher wages. Still he adds, "I say rather higher wages, for it should not be inferred from the goodness of the manufactures, that the workman is held in esteem, or arrives at a state of independence."\(^93\)

Moreover, sometimes the nobility recruited ordinary artisans, working on their own, forcibly for their *Karkhanas*: "The rich will have every article at a cheap rate. When an *Omrah* or *Mansebdar* requires the services of an artisans, he sends to the *bazar* for him, employing force, if necessary, to make the poor man work; and after the task is finished, *the unfeeling lord* pays, *not according to the value of the labour* [emphasis added], but agreeably to his own standard of fair remuneration; the artisan having reason to congratulate himself if the *Korrah* has not been given in part payment."\(^94\)

These quotations concerning *Karkhanas* make it very clear that artisans presumably having acquired specialized skills prior to their employment in *Karkhanas*, were converted into wage labourers. Their tools used to be simple and they were owners of their tools. The productiveness of such a wage labourer possibly depended on his personal efficiency rather than on the perfection of his tools. Similar tools were used for various purposes. Since in the *Karkhanas* we do not hear about the emergence of the detailed labourer, there was no urgency for

\(^93\). Ibid.

\(^94\). Ibid., pp.255-256.
alterations in implements of artisans working in Karkhanas. In Karkhanas presumably there was no apparent improvement in the instruments of labour. Karkhanas could not therefore create material conditions required for machinery, which is nothing but a combination of simple separate implements driven by a single source of power.

There are a few more references to merchants undertaking production in manufactories. For example Jan van Twist (1634) states that “some banias, who used to earn their livelihood by purchasing and selling alone, have in their houses 40 to 50 looms which belonged to them, which they keep continuously in the work, in order to manufacture all kinds of cloths according to their desire, for that purchase they supply cotton yarn alone to the weavers and workers are paid their wages daily, ...”95

Other examples can be cited from the Dutch East India Company’s efforts to secure the production of silk, bleaching and dyeing of cotton cloths, etc. In 1653 the Dutch East India Company established its small silk reeling building (haspelary).96 The master reeler was provided with the necessary implements, accommodation for reelers and raw material and he on the other hand was to supply the Company with silk yarn of even quality and of specific weight within a stipulated time.97 Towards

95. V.O.C. 1113 (K.A. 1025), f.248r.

96. Om Prakash, The Dutch East India Company and the Economy of Bengal, 1630-1720, p.113.

97. Ibid.
the end of 1654, the master reeler was in debt (Rs.2,255) to the Company because of undelivered silk. The reellers were generally paid in advance for producing specific quantity of raw silk and very often they used to desert the place which led to increase in bad debts. In 1670 a new master reeler Abhay Ram was appointed. In 1671, it was realised that the expenses had increased by Rs.0.12 to 0.19 per seer of raw silk than what the merchants supplied. Thus as a consequence Abhay Ram was unable not only to clear the debts of his predecessors but himself became indebted for Rs.1,394/- which the Company eventually condoned. In 1673, the Company decided to organize the production itself and converted the position of contractor to manager at a salary of Rs.200/- per annum. The Dutch Company employed 100 reellers in 1675. But this effort also apparently failed, because in 1681; we hear about the Company's own master reeler Govind Ram (Govindenam), but the Company suffered a huge loss. The Company terminated his

98. Ibid., p.115.
99. Ibid.
100. Ibid.
102. Ibid.
104. Ibid., p.442.
105. Ibid.
appointment and appointed another master reeler in his position.\textsuperscript{106}

In order to ensure the adequate supply Jan Pit had contracted with private suppliers to expand their own reeling units and reel the best kind of silk in accordance with the samples.\textsuperscript{107} They were threatened by the Company that if they supplied more than 1700 bales to the English Company then the Dutch Company would stop purchasing from them.\textsuperscript{108} In the first quarter of 18\textsuperscript{th} century, the Dutch Company contemplated to increase its own production by enhancing the number of reelers up to as large a number as 4000.\textsuperscript{109}

Om Prakash considers the establishment of the Kasimbazar reeling unit by the Dutch as a development of some importance in the emergence of capitalist mode of production in Mughal India. But the Dutch reeling unit did not witness any real development in the direction of decomposition of skilled labour into further branches, specialization of the instruments of labour which is necessary for capitalist organisation of production. At the most it was a gathering of a number of labourers under one shed to ensure security and quality, and not necessarily increased productivity.\textsuperscript{110}

\begin{itemize}
\item \textsuperscript{106} Ibid.
\item \textsuperscript{107} Ibid., p.770.
\item \textsuperscript{108} Ibid.
\item \textsuperscript{109} Om Prakash, \textit{The Dutch East India Company and the Economy of Bengal, 1630-1720}, p.117.
\item \textsuperscript{110} Ibid. For the crucial features of European manufactories, see, Marx, \textit{Capital}, I, pp.318-345.
\end{itemize}
Like the silk reeling unit in Bengal, the Dutch East India Company had also organised bleaching and dyeing units on the Coromandel coast. They had established a blue-dyeing unit at Tegenepatam (Tegnapatam) "where the cotton cloths (which these chiefs hand over according to the proportion (mentioned in general orders) are dyeing at reduced rates because the indigo from south is never so expensive as the northern indigo, which is grown around the quarters of Pale wanze near by Nagel wanze (Naglavancha)."\footnote{111}

Another dyeing unit was established at Sadaspatam.\footnote{112} A substantial quantity of cloth was dyed there which brought profit every year.\footnote{113} At Nagelwanze the Dutch Company had a dyeing unit, located in the horse-stable and another one outside the lodge.\footnote{114} At Palakollu, a dyeing unit was functioning in the Dutch lodge.\footnote{115} By the end of the 17th century we hear of the Dutch dyeing units at Porto Novo and Pondicherry.\footnote{116}

\footnote{111}{Havart, I, p.49; Van Dam, II(2), p.112-13, 156.}
\footnote{112}{Havart, I, p.93.}
\footnote{113}{Ibid.}
\footnote{114}{Havart, II, p.44.}
\footnote{115}{Havart, II, pp.44-45; III, pp.5,14,21; Van Dam, II(2), pp.113, 156-157.}
\footnote{116}{Generale Missiven,1686-1697, V, pp.797, 846.}
Regarding the workers employed in these dyeing units, our sources are reticent. At Palakollu, some twenty two dyers were employed.\textsuperscript{117} They were paid a salary of $\frac{1}{2}$ pagoda per month which was considered more profitable than paying out daily wages (dagelijix coulijs).\textsuperscript{118} Besides, it was found that at Tegenapatam some weavers, painters and dyers were indebted to the Dutch Company. Their inability to pay back the debt was considered a justification for holding them\textsuperscript{119} presumably to work for the Dutch Company. Interestingly, it is claimed that these poor artisans were satisfied with this.\textsuperscript{120}

The Dutch Company had also established its own bleaching unit at a small village Timmeninepalem, situated in between Nagelwancha and Golconda.\textsuperscript{121} Washers and beaters worked there.\textsuperscript{122} Another bleaching unit was located at Narsapur near Palicol.\textsuperscript{123} In 1674 the Dutch Company

\textsuperscript{117} Havart, III, p.21; Van Dam, II(2), p.156.  

\textsuperscript{118} Van Dam, II(2), p.156. One dyer was paid 2 nevels. One pagoda was divided into 12 fanums and one fanum was divided into 8 to 9 nevels at Palakollu, 9 to 10 nevels at Daatcheron and 10 to 11 nevels at Bimilipatnam, see Van Dam, II(2), p.548.  

\textsuperscript{119} Van Dam, II(2), p.113.  

\textsuperscript{120} Ibid.  

\textsuperscript{121} Havart, II, p.44.  

\textsuperscript{122} Ibid.  

\textsuperscript{123} Havart, III, p.17; Van Dam, II(2), p.155.
was gifted with an estate at Narsapur and the washers of the place were permitted to work for the Dutch.¹²⁴ Each family was to pay 3 pagodas per house to the Diwan.¹²⁵ There were four chiefs of the washers and their poll-tax (hoofdgeld) which they gave annually amounted to 500 guilders.¹²⁶ Twenty per cent was deducted from their wages.¹²⁷ The Dutch Company paid piece-wages to the artisans, not daily wages.¹²⁸ In 1676 the washers consisted of 40 families, who living at Masulipatam's periphery worked in the Company's garden.¹²⁹ They received a farman from the king of Golconda when he visited Masulipatam for the first time in 1676 to free them from the vexations of local officials who used to extort money from them.¹³⁰ They were permitted to pay 105 rupees and 8 pagodas in three instalments, mainly for their permitted residence

¹²⁵. Ibid.
¹²⁷. Ibid.
¹²⁸. Ibid; Van Dam, II(2), p.155 states the charges in terms of local currency. The bleachers charged 1¼ for a piece of fine guinees cloth, 7/8 for common guinees, ¼ for bethilles, 5/16 for salempuris, 2 for parcallas, 1½ pagoda was spent for blue guinees cloth, 1 pagoda for salempuris, ½ pagoda for bethilles.
¹²⁹. Van Dam, II(2), p.149.
¹³⁰. Havart, I, p.187; see also Van Dam, II(2), p.149. Havart has given the translated text of the said farman.
in and around the Dutch Company’s garden. In case of scarcity of water in the tanks there, they could wash in the tanks outside the nearly village of Suri.\textsuperscript{131} The Dutch Company stood as guarantee and received profit on the wages paid for bleaching which was paid to the chief of all the washers.\textsuperscript{132}

We hear about another bleaching unit at Daatcheron (Draksharama) where the washers had been granted lease by the governor Kistnappa.\textsuperscript{133} They were settled in two tiny villages Golepalen and Gandewaron on lease. But the upper chief (opperhoofden) had proposed to choose another suitable place for establishing the bleaching unit in the territory of another governor called Siombro.\textsuperscript{134} Siombro was ready to allow the washers to reside for 30 to 40 pagodas per year.\textsuperscript{135} Tegenapatam also had a bleaching unit but it was washed away because of the heavy rainfall and ensuing flood in 1678-79.\textsuperscript{136}

Thus from this brief survey of the Dutch East India Company’s efforts to organise production in the various segments of textile production

\textsuperscript{131} Ibid.

\textsuperscript{132} Van Dam, II(2), p.149.

\textsuperscript{133} Generale Missiven, 1675-1685, IV, p.293; Van Dam, II(2), pp.158-159.

\textsuperscript{134} Generale Missiven, 1675-1685, IV, p.290.

\textsuperscript{135} Ibid., pp.290-91.

\textsuperscript{136} Ibid.
we find that it was not basically different from domestic production. At best they could convert the artisan who was previously an independent or contract producer into a wage labourer. In other essentials, it seemed more a development of the putting out system rather than of capitalist production. In fact it can be argued that the availability of cheap skilled labour obstructed chances of development of capitalistic organization even though there are instances of some enterprising individuals or the Dutch or English East India Companies employing large number of daily wage earners in particular sectors of the textile industry. In none of the instances cited above do we find any employer introducing any improved tool for increasing production, or any technological improvement.

Quantitative Expansion of Textile Production

There is a consensus among scholars that there was substantial expansion of textile production in 16th and 17th centuries.137 The large urban market in the Mughal Empire and European trade are held to be the twin factors behind the expansion. So far as the first reason is concerned a study of the share of textiles in the expenditure on the Imperial household explains partly the reason behind the expansion of demand for textiles. Pelsaert had estimated that the imperial stores had cloth to the value of Rs,1,60,13,231/- (woollen cloths valued at Rs.5,03,252; other kinds at

Rs.1,55,09,279). Shireen Moosvi has reduced this by 20 per cent to get the actual expenditure, that is, to get the cost price, and obtained a figure of 1,67,32,193 dams (Rs.4,43,305) for imperial expenditure on cloth alone for 1595-6.\textsuperscript{138} Even this amount was not reflective of all expenditure. In each half year (fasl) one thousand suits were prepared for emperor from different varieties of cloth.\textsuperscript{139} Of these 120 were kept in readiness throughout the year for conferring robes of honour (\textit{khilat}).\textsuperscript{140} Shireen Moosvi’s suggestion that the actual expenditure was even higher than what Pelsaert had estimated, appears to be correct.\textsuperscript{141}

\section*{Urban Demand}

The next important segment of demand for textiles was generated by the nobles of the empire. The \textit{mansabdars’} salary accounted for a very large part of the total effective \textit{jama} – 81.76 per cent.\textsuperscript{142} More than one-third of the \textit{jama} is estimated to have been spent on craft products.\textsuperscript{143} The size of investment on craft products was apparently large, but it did not

\textsuperscript{138} Shireen Moosvi, \textit{The Economy of the Mughal Empire c.1595}, pp.260-62.

\textsuperscript{139} Ibid., p.262.

\textsuperscript{140} Ibid.

\textsuperscript{141} Ibid., p.263.

\textsuperscript{142} Ibid., pp.270, 273.

\textsuperscript{143} Ibid., p.293.
necessarily contribute to the production of large quantities of commodities.\textsuperscript{144} It has been pointed out that even this demand for craft products was for goods of high value or rarities.\textsuperscript{145} In other words, there was as yet no “home market, representing an effective demand for large amounts of manufactured goods of moderate value”.\textsuperscript{146} Secondly, many of the articles required by nobles were produced in their own workshops (\textit{karkhanas}).\textsuperscript{147} Still they also purchased finished goods on the market. Secondly, it was not possible for smaller nobles to depend entirely on their own establishments. This is possibly the reason why the markets were full of expensive articles.\textsuperscript{148} Bernier missed the glamour of Parisian shops; but this did not mean that goods were not available: only “here the costly merchandise is generally kept in warehouses, and the shops are seldom decked with rich or showy articles. For one that makes a display of beautiful and fine cloths, silk and other stuffs striped with gold and silver, turbans embroidered with gold, and brocades, there are at least five and twenty where nothing is seen but pots of oil”.\textsuperscript{149} Thevenot

\textsuperscript{144} Ib\textit{id.}, pp.293-94.

\textsuperscript{145} Ib\textit{id.}, p.294.

\textsuperscript{146} Ib\textit{id.}


\textsuperscript{148} Ib\textit{id.}

\textsuperscript{149} Bernier, p.248.
(1666) speaking about Cambay observes, "...and the shops are full of Aromatic Perfumes, spices, silken and other stuffs. There are vast number of Ivory Bracelets, Agate-Caps, Chaplets and Rings made in this Town, and these Agates are got out of Quarries of a village called Nimodra..." What is also of significance for us is the multiplicity of urban and rural markets and their capacity to supply expensive commodities for nobles and rich persons including merchants residing in cities and local aristocracy living in rural areas. But the stress was on the production of expensive cloth and other commodities to be sold to these classes. It has been estimated that 15 per cent of the total population possibly lived in towns. In the central regions of the Mughal Empire, an estimate has been ventured that a family with a size of 4.5 members spent, for bare subsistence, 342.64 dams per annum on food and 212.3 dams on clothing and these along with other expenses amounted for 90 per cent of its total income. The urban population spent 1,09,94,17,661 dams (Rs.2,74,85,692) on food while on cloth it was about 68,12,64,107

150. Thevenot, p.18.


152. Shireen Moosvi, The Economy of the Mughal Empire, c.1595, p.305.

153. Ibid., pp.305-306.
It has been suggested that the urban population of Akbar's empire at the end of the 16th century spent around 1,31,85,25,823 dams on food and cloth (Rs.3,29,63,145). The poorer sections of the urban population also created demand for textiles. The ruling class spent 17 per cent of its income in maintaining unproductive labour; and there was a large section of urban population dependent on service of individual nobles, their troopers and the hangers on. This was partly the reason why Bernier thought that Delhi had the appearance of a camp. In such 'camp cities' a substantial population of the artisans and unskilled labourers engaged in producing sundry craft goods, in trade and transport to cater to the needs of aristocrats and rich merchants and others. Thevenot writes, "Broudra (Baroda) is one of the best . . . It hath pretty good Walls and Towers, is inhabited by a great many Banians; and seeing the finest stuffs in Guzerat are made in this Town, it is full of Artizans who are continually employed in making of

154. Ibid., p.306.
155. Ibid.
156. Ibid., p.307.
159. Ibid.
them."160 A few years earlier Wollebrandt Geleynssen de Jongh had observed about Baroch (Brootchia) that "In this town as well in the villages live people of different origin so Muslims, Hindus, Banias, Khatris as well as Persians who earn their livelihood altogether from weaving, yarn making and purchasing cotton because here a good quantity of cotton cloth is made of varying breadth and fineness . . . also live here the best and fine weavers of cloth . . .."161 But the artisans were paid wages sufficient enough to sustain themselves. Per capita productivity was presumably very low in the absence of any advance in technical knowledge. Since the nobility had the requisite wealth to spend on all kinds of luxury goods and therefore was capable of generating demand for long distance trade in high value goods.162 There was therefore an urban population of substantial size, but possibly less than a sixth of the total population.163

The European travellers were particularly struck by their size when compared to towns in Europe.164 In 1600, there were only three cities in

160. Thevenot, p.44.


163. Irfan Habib, "Potentialities of Capitalistic Development in the Economy of Mughal India", pp.211-12; also Shireen Moosvi, The Economy of the Mughal Empire c.1595, p.308.

Europe whose population exceeded 200,000 and nine crossing 100,000 population.\textsuperscript{165} After a century in 1700 the total population of towns with a population of 5,000 and above in England, Scotland and Wales, did not exceed 13 per cent of the total population.\textsuperscript{166} And England by 1700 had largest concentration of urban centres.\textsuperscript{167} The city of Agra had possibly the largest concentration of urban population. In 1609, it was around 500,000, by 1629-43 it rose to 660,000 and by 1666 it was estimated to be 800,000.\textsuperscript{168} Delhi (1659-66) had a population 500,000, Lahore (between 1581-1615) 400,000 to 700,000, Thatta (1631-1635), 225,000, Ahmadabad (1613), Surat (1663-1700), Patna (1631), Dacca (c.1630) and Masulipatam (1672) had a population of 200,000 each.\textsuperscript{169} Shireen Moosvi has further refined this argument by taking into account the size of urban taxation.\textsuperscript{170} According to her Agra was the largest city in the empire, and the level of urbanization was fairly high.\textsuperscript{171} It had 15


\textsuperscript{166} Ibid.

\textsuperscript{167} Ibid.

\textsuperscript{168} Ibid., p.171.

\textsuperscript{169} Ibid.

\textsuperscript{170} Shireen Moosvi, \textit{The Economy of the Mughal Empire, c.1595}, pp.310-11.

\textsuperscript{171} Ibid., pp.310, 317 (Appendix 13-A)
flourishing towns. Some of them were manufacturing centres (Fatehpur Sikri, Bayana, Alwar and Gwalior) while other 5 were commercial centres (Chanwar and Dholpur).\textsuperscript{172} Gujarat was the second largest urban tax payer with 13 towns.\textsuperscript{173} Lahore had 12 urban centres, Allahabad had 7, Awadh 2, Delhi 7, Ajmer 5, Malwa 7 urban centres.\textsuperscript{174} This extent of urbanization matches well with the level of urban taxation. Towns in Gujarat contributed 18.73 per cent of the province's \textit{jama}, and in Agra 15.7 per cent, while in other provinces the ratio hardly touched 5 per cent mark.

**Demand in Overseas Markets**

The other important factor towards expansion of textile production was the arrival of European companies during the sixteenth and seventeenth centuries. The discovery of the Cape of Good Hope created a direct unhindered access to India with significant economic and later political consequences. For India's export it had an additional significance because India's trade through Red Sea does not show any sign of decline till the end of the 17\textsuperscript{th} century.\textsuperscript{175} However, the fact that Europe emerged as one

\textsuperscript{172} Ibid.

\textsuperscript{173} Ibid.

\textsuperscript{174} Ibid., pp.310-14.

\textsuperscript{175} Niels Steensgaard, "The Route through Quandahar: The significance of the overland trade from India to the West in the Seventeenth Century", in Sushil Chaudhuri and Michel Morineau, eds., \textit{Merchants, Companies and Trade, Europe and Asia in the Early Modern Era}, pp.55-73. See also, Stephen Frederic Dale, \textit{Indian Merchants and Eurasian Trade, 1600-1750}, Cambridge, 1994.
of the principal markets for both luxuries and craft manufactures of the world with India being one of major producers for the European market. India’s import of European commodities was not comparable in volume and value, with what India was exporting. Therefore there was a problem of payments – which could be solved only by importing silver, gold and horses till the end of the 16th century. So far as exports are concerned a major part of Indian exports was constituted by Indian textiles. Moreland had observed that cotton goods stood out as the “most conspicuous feature of the trade, though there were some ports exporting their local produce in a limited way”. Between 1620-1640 the annual exports of Indian textiles by the Dutch averaged only fl.0.5 million. But by the early 1650’s it crossed fl.2 million mark and reached a figure

176. For imports from Europe or by European companies we do not as yet have any adequate study. Shireen Moosvi, *The Economy of The Mughal Empire, c.1595*, pp.375-381, has tried to estimate the value of these imports. She is of the opinion that the imports of spices, excluding pepper into Mughal empire from non-Indian sources could barely have amounted to a million rupees in value (ibid, p.380). According to her findings, the main imports of the Mughal empire were silver, gold and horses. The other items of import were of relatively little account, “probably accounting for only a tenth of the total imports, in aggregate” (Ibid., p.381).

177. Shireen Moosvi, *The Economy of the Mughal Empire, c.1595*, p.381.

178. Moreland, *From Akbar to Aurangzeb*, p.54.

of fl.2.67 million by 1661-5. Our assessment on the basis of order lists suggests that from November 1684, there was a steady rise of textiles of Coromandel origin. It reached its highest level of fl.3.78 million by 1686-90. These were aggregate values of total annual exports to Europe and Asia. Out of these, only 20 to 25 percent generally was exported to Europe, whereas South-east Asian markets were major claimants of Coromandel textiles. The value of textiles rose rapidly from around fl.300,000 in 1617 to fl.455,000 in 1626 and fl.824,000 in 1640. Its value increased to fl. 1.3 million in 1644 and fl. 1.55 million in 1650. This trend broadly continued till the end of the 17th century when textiles produced in Java and adjacent regions started competing against Coromandel cloth. In the early 1680's, it was reported that the Javanese had begun to prefer the painted cloth manufactured in their own country.

180. Ibid.
181. See Chapter 10.
182. Om Prakash, European Commercial Enterprise in Pre-Colonial India, p.178.
183. The disaggregation of the value is not possible mainly because the exports for Europe and South-east Asia, were sent to Batavia and listed jointly. See Om Prakash European Commercial Enterprise in Pre-colonial India, p.180.
184. Ibid., pp.181-182.
185. Om Prakash, European Commercial Enterprise in Pre-Colonial India, p.182.
186. Tapan Raychaudhuri, Jan Company in Coromandel, p.162.
to the painted textiles imported from Coromandel. So far as the supply to Amsterdam is concerned, in the last decade of the 17th century, Gujarat had achieved a lead over Coromandel textiles, culminating in the year 1700 in a ratio of 31:15 representing shares in the total orders placed for textiles from Gujarat and Coromandel.187

So far textiles ordered from Gujarat for Holland is concerned, there was a continuous rise beginning from 56000 pieces in 1681, to 2,28,500 pieces in the next decade in 1691 and remained at 2,25,000 pieces in 1700.188

Gujarat also exported textiles to the spice islands and Malaya.189 Gujarat textiles were also greatly in demand in the Middle East – the main emporia being Bandar Abbas and Basra in the Persian Gulf and Mocha in Yemen.190 It has been estimated that the value of textiles exported to Persia by the Dutch from the mid 1630s fluctuated between around fl.50,000 and fl.150,000 per annum.191 The gross profit earned on textiles was 40 per cent in 1642 but started declining after that to 4 per cent in 1651 and 7-8 per cent in 1659. Between 1660 and 1670, the trade in

187. See Chapter10.
188. Ibid.
189. Om Prakash, European Commercial Enterprise in Pre-Colonial India, p.193.
190. Ibid., p.194.
191. Ibid., pp.194.
Gujarati textiles became insignificant and generally accounted for less than 1 per cent of the total Dutch exports from Gujarat.¹⁹² This very fact that the importance of Persia had declined as a market for Indian textiles and other commodities like indigo and pepper, shows the impact the advent and flourishing of the Europe companies had on India’s “traditional” markets.

So far Bengal, the third and later on the most important region of textile production, is concerned, it had emerged as a major exporter of textiles and raw silk for the European market. It has been estimated by Om Prakash that the average annual value of the Dutch Company’s total exports from Bengal to other parts of Asia as well as to Europe witnessed a rise from fl.200,000 in the late 1640s to over a million florins by 1650.¹⁹³ By the early 1680s it touched a mark of fl.200,000.¹⁹⁴ Of this, raw silk accounted for 40 per cent of total Dutch exports from Bengal in 1675-6 and textiles for another 22 per cent.¹⁹⁵ Residual 38 percent comprised saltpetre (12 percent), opium (7 percent) and miscellaneous commodities accounted for the rest.¹⁹⁶

¹⁹². Ibid. It seems that the decline in demand in Persia for textiles from Gujarat was well compensated by rise in demand in Netherlands (see above, p.47)

¹⁹³. Ibid.

¹⁹⁴. Ibid.

¹⁹⁵. Ibid.

¹⁹⁶. Ibid.
Bengal was quite helpful to the Dutch Company in its conduct of trade within Asia. By the 1660s, it contributed 55 to 70 percent of exports to Batavia, Japan and other parts of Asia. In the next decade (1670s) it touched the 80 percent mark. Glamann's comprehensive study of the geographical distribution of piece-goods in return cargoes in 1697 shows that more than half of the textiles reached Holland from Bengal. In 1697 the total import was to the tune of 5.4 million florins, of which approximately 1.75 million florins "or just under one third of the total originated from Bengal."

For the raw silk and textiles from Bengal, there was only a limited market in Europe. Glamann points out that the Court of Directors had reduced the demand for silk from Bengal as early as 1655 by reducing the demand to 100,000 ponds because of falling prices. It declined further in the 1670s and in the beginning of the 1680s to 60,000 to 80,000 ponds. Then with a rise in prices, the demand for Bengal silk

197. Ibid., pp.202-204.

198. Ibid.

199. Glamann, p.144.

200. Ibid.


202. Glamann, p.125

203. Ibid.
passed the level of 1654. But by the turn of the century, in 1701, the Heeren XVII asked for a total of 285,000 ponds of silk, viz. 40,000 ponds of Chinese silk, 220,000 ponds of Bengali tanni and 25,000 ponds of bariga. It is interesting to note here that, according to Tavernier, one-third of the Bengal silk was already exported, through the Dutch and the English before 1667, and one-third through Persian and Armenian merchants (part of which also reached Europe presumably through overland transport to the Mediterranean ports and from there to ultimate destination i.e. Europe) and the remaining one-third to be used by Indian weavers. The great silk manufacturers of Gujarat thrived on silk imports from Bengal. Since the technology of silk reeling did not witness any drastic change, an expansion in production to meet the rising demand was a remote possibility, could only take place through expansion of sericulture and labour force.

204. Ibid.

205. Ibid.

206. Ibid, p.126. The war in which Italy was involved for sometime possibly eliminated the greatest supplier of silk in Europe, just as the French War had discontinued the Turkish Trade (see Glamann, p.126.)


208. Tavernier, II,p.2.
After 1670 there was an increase in the interest in cottons and a boom was witnessed in the 1680s.

**Sales of Cottons at Kamer Amsterdam, 1649/50 – 1733/34**

<table>
<thead>
<tr>
<th>Five Years Totals</th>
<th>Quantities (1000 pieces)</th>
<th>Value (1000 florins)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1649/50-53/54</td>
<td>208</td>
<td>2,862</td>
</tr>
<tr>
<td>1654/55-58/59</td>
<td>241</td>
<td>2,930</td>
</tr>
<tr>
<td>1659/60-63/64</td>
<td>225</td>
<td>2,824</td>
</tr>
<tr>
<td>1664/65-68/69</td>
<td>214</td>
<td>2,585</td>
</tr>
<tr>
<td>1669/70-73/74</td>
<td>357</td>
<td>3,678</td>
</tr>
<tr>
<td>1674/75-78/79</td>
<td>329</td>
<td>2,886</td>
</tr>
<tr>
<td>1679/80-83/84</td>
<td>619</td>
<td>4,855</td>
</tr>
<tr>
<td>1684/85-88/89</td>
<td>1,119</td>
<td>8,392</td>
</tr>
<tr>
<td>1689/90-93/94</td>
<td>542</td>
<td>5,919</td>
</tr>
<tr>
<td>1694/95-98/99</td>
<td>846</td>
<td>7,931</td>
</tr>
<tr>
<td>1699/1700-03/04</td>
<td>930</td>
<td>8,758</td>
</tr>
<tr>
<td>1704/05-08/09</td>
<td>819</td>
<td>10,475</td>
</tr>
<tr>
<td>1709/10-13/14</td>
<td>980</td>
<td>10,715</td>
</tr>
<tr>
<td>1714/15-18/19</td>
<td>1,068</td>
<td>11,494</td>
</tr>
<tr>
<td>1719/20-23/24</td>
<td>1,257</td>
<td>11,259</td>
</tr>
<tr>
<td>1724/25-28/29</td>
<td>1,192</td>
<td>11,791</td>
</tr>
<tr>
<td>1729/30-33/34</td>
<td>625</td>
<td>6,640</td>
</tr>
</tbody>
</table>

Source: Glamann, p.143.

The above table is an eloquent testimony of the fact that the Dutch East India Company had been able to create a big demand for Indian cloth in Holland as well as in other parts of Europe.

Thus the 17th century witnessed a substantial expansion in the value of the Dutch Company's Asian imports into Europe. Beginning with less
than 3 million over 3 years period between 1619-21, the imports rose to f.15 million during 1698-1700. Simultaneously the composition of imports also underwent significant changes. Pepper and other spices used to account for nearly 74 percent of the total at the beginning of the 17th century and its share was reduced to 23 percent by the end of the century. The share of textiles and raw silk, on the other hand escalated from 16 percent to as much as 55 percent for the same period. The export of indigo occupied a significant space in India’s exports. Biana, Sarkhej and Coromandel coast were the major exporters of indigo besides the indigo from Sind. Indigo from Sarkhej constituted 62.5% of the total demand in 1633. In the next year indigo from Biana relegated Sarkhej to the second position. We have dealt with the relative position of indigo production centres and their share in total export. The Appendix-C makes it very clear that export of indigo continued to retain its significance in India’s exports.

In the case of the English East India Company as well imports of Indian textiles show a rise with the 1660’s. In 1664 the total quantities

209. Cf. Om Prakash, *European Commercial Enterprise in Pre-colonial India*, p.341; see also Glamann, pp.73-111.

210. Om Prakash, p.341.

211. See Appendix C to Chapter 10 along with H.W. van Santen, p.148 for supplementing information about indigo from Biana. Our Appendix C takes note of Gujarat and Coromandel’s exports of indigo.
of calico exported by English Company reached more than a million pieces and their value amounted to 73% of the entire trade of the Company.\(^{212}\) According to K.N. Chaudhuri, the first long movement lasted from 1660 to about the middle of the 1680s.\(^{213}\) In between there was a temporary break in 1672-3 when the European markets were flooded with East India goods.\(^{214}\) But after this brief and small downturn, there was resumption of the upward trend, reaching its peak in 1684.\(^{215}\) The total quantities ordered in 1682 had risen to 2.8 million pieces.\(^{216}\) The actual imports of Indian cotton piece goods remained low hereafter till 1688-89 because of the Anglo-Mughal war of 1688-89,\(^{217}\) which naturally interrupted the exports to England.\(^{218}\) Broadly, this trend continued till 1700. So far as the regional distribution is concerned, in 1664, Surat provided 50 percent of the total quantities and 35 percent of the total value of textiles imported into England.\(^{219}\) The share of Madras was 41


\(^{213}\) Ibid.

\(^{214}\) Ibid, p.285.

\(^{215}\) Ibid.

\(^{216}\) Ibid.

\(^{217}\) Ibid., p.288.

\(^{218}\) Ibid., p.290.

\(^{219}\) Ibid.
percent of the volume and 48 percent of the value, while that of Bengal was 9 and 17 percent, respectively.220 The share of Bengal in total trade continued to remain low till the 1680's, while on the other hand Surat continued to dominate in quantity, though it was Madras which had the largest share in terms of value.221 The second boom period was in 1690s when there was an expansion in the demand for textiles. In 1700 the textile imports of the Old Company alone amounted to 868,095 pieces.222

**Slavery and European Demand for Indian Textiles**

A further factor for the increasing demand for Indian textiles, through the European Companies, was undoubtedly the growth of African slave trade.

The Portuguese initiated a slave trade of their own as early as 1442 by acquiring slaves through raids.223 Subsequently the declaration of the second Bull, *Roman Portifex*, 8 January 1455, made its 'legitimacy' more explicit.224 Slaves were also acquired by the Portuguese by trading commodities of foreign origin for African slaves.225 Besides other

220. Ibid.

221. Ibid.

222. Ibid.


224. Ibid., pp. 21-22.

225. Ibid., p.30.
commodities, textiles were imported from England, Ireland, France and Flanders, though some Portuguese manufactured cloths were also used.\textsuperscript{226} These slaves were to put to a variety of work in Africa as well as Portugal.\textsuperscript{227} So far the Dutch interest in slave trade is concerned, we hear that as early as 11 November 1614, the Governor General Gerard Reynst observed that for many works in Amboina, Banda and Moluccas slaves were needed;\textsuperscript{228} and he wrote those who were available, were very valuable and good for working as soldiers or sailors (soldaten off matroesen uit gedaen weesen).\textsuperscript{229} Reynst wrote that “the Dutch Company should send ships to Madagascar and reach close by island Gion de Nova (Juan de Nova or St. Christophe, island in the strait of Mozambique, west of Madagascar) where at two places Mangelagij (Mangelagy) and Sada (on the west coast of Madagascar in the bay of Bali), there was an abundance of goods, “especially beasts”, at very low costs.\textsuperscript{230} The commodities which were in demand included cloth manufactured with blue stripes (most likely of Indian origin) like the cloth used by ships’ crew.\textsuperscript{231} It was reported

\textsuperscript{226} Ibid.

\textsuperscript{227} Ibid., pp.88-89.

\textsuperscript{228} Generale Missiven 1610-1638, I, pp.44, 122.

\textsuperscript{229} Ibid.

\textsuperscript{230} Generale Missiven 1610-1638, I, p.44.

\textsuperscript{231} Ibid.
that in these places Arabs from the town of Sihir (at the South coast of Arabia) and Kishim as well as from the towns of Pathe (Pata, an island on the east coast of Africa), Lamo, Lanu (situated little south of Pata) and Melinde (Malindi or Melinda) brought cloth from India, along with other goods, taking in exchange not only commodities and money, but also a great number of ‘blacks’ (Swarten), to the tune of 4 to 5 thousand, every year. This was their best commodity, purchasing one black for 1½, 2 to 3 rials of eight and some rice. The slaves were needed for building construction. Reynst writes that he had already found that one slave performed more work then two or more Dutch men would perform. They were required also for collection of mace and nutmegs at Pouloway because Ciawers (who performed this work) had left the place. (Around 1000 slaves for these jobs were brought from the Coromandel Coast, and there are continuous references to this source of slave supply, though it is always mentioned that they were purchased in lieu of money). In 1634, many yachts were sent to Africa to procure

232. Ibid., pp.44, 50.
233. Ibid.
234. Ibid., p.46.
235. Ibid.
236. Ibid., p.72.
237. Ibid., p.121.
slaves from the countryside for settling them in Banda. Joan Maetsuyker, the Governor General at Batavia had sent 25 leggers (2) of arrak, 20 packs of rice, 18 packs of diverse varieties of cloth and other small provisions for Cape of Good Hope and desired to get rice and 80-100 slaves from there in 1655. In 1657, the price of a slave varied from fl.20 to fl.30-33. It was realized in 1679 that slaves were needed for mining gold and silver in the mines of Salida. In these mines presumably hired labour had proved extremely uneconomic for it was found that total earning from the mine accounted for fl.1322.19.5 in contrast to total expenditure incurred there, i.e. fl.122,667.18.13 between 1671 to 1677. In 1679, 115 slaves were purchased at Madagascar. The request was repeated on 20 April 1681 for purchase of slaves at Madagascar for working mines at Salida. By 1682, 187 male and 138 female slaves were procured to help in mining at Salida. In June 1684, Padang received

238. Ibid., pp.470-71.
242. Ibid.
243. Ibid., p.311.
244. Ibid., p.464.
245. Ibid., p.556.
108 out of 274 slaves from Madagascar.\textsuperscript{246} About fl.21864 mostly rials of eight were sent to Madagascar for procurement of slaves.\textsuperscript{247} They were successful in obtaining 180 slaves in the Bay of St. Augustin and the Lijvoetsrivier (river Marondava) in lieu of matchlocks/flintlocks (snaphaanen), gun powder and other knick-knacks.\textsuperscript{248} On 13 November 1686, 212 slaves were brought to the Cape of Good Hope from Madagascar costing fl.11659 (each slave cost around fl.55), out of which 48 had expired and the rest were sent to Batavia.\textsuperscript{249} On 2 September 1687, it was reported that 123 male and 122 female slaves and 31 slaves from Nias were purchased and brought from Madagascar.\textsuperscript{250} It seems that these slaves were mostly meant for working in the mines of Salida where 45 whites (blanken) and 510 slaves (swarten) were reported working and together they could extract 14,200 ponds of ore which had fl.23,870 in gold and fl.25,045 in silver.\textsuperscript{251} On the other hand it is reported that African slaves were needed for completing the fortification work in Ceylon because of large scale deaths and weakness of slaves of Malabar

\textsuperscript{246} Ibid. p.726.

\textsuperscript{247} Generale Missiven, 1686-1697, V, p.16.

\textsuperscript{248} Ibid., pp.16-17.

\textsuperscript{249} Ibid., p.144.

\textsuperscript{250} Ibid., p.136.

\textsuperscript{251} Ibid., p.180.
and because they were not capable of cutting out the stones.252 By 14 January 1695, 37 slaves were purchased at Madagascar at the cost of fl.2384 (slave = 65) and brought to Batavia.253 Thus within half a century between 1657 to 1695, the prices of slaves had escalated by no less than 216 to 325 per cent.

It is interesting to note here that in a secret instruction to the master and head of the ship Hasselt (1657) it is clearly mentioned that the cotton cloth along with other commodities like cauris, fine coral, iron bars, the best silken stuff, Cyprian cloth was greatly liked and purchased by the king and these were not to be sold to nobles and others.254 This is explained as a reason for making slaves expensive.255 The importance of Coromandel cloth in slave trade is further attested in the instructions issued by Heeren Bewinthebberen in 1671 in which it was stressed that the cotton textiles presumably from India would be very helpful in procuring slaves.256 There appears to be a link between rise in the prices of slaves and escalation in the demand for Indian textiles and especially Negros Cleeden (cloth for

252. Ibid., p.370.
253. Ibid., p.731.
254. Van Dam, II(3), p.535. Similar observations are also made in a Memorial carrying directives for purchasing slaves at the coast of Guinea, see Van Dam, II(3), pp.538-539.
255. Ibid., p.535.
256. Ibid., p.594.
Negros) and Guinees cloths. An analysis of the orders for these two kinds of cloth shows that these two together far surpassed orders for other cloth from Coromandel coast alone. These textiles were first sent to Batavia and from there to the Netherlands for its final destination in Africa to purchase slaves. In 1686 alone 4950 packs (97,000 pieces) of Guinees cloth were ordered at the value of fl.890,1000 for the Netherlands. In addition, 125 packs of Negro-cloths (20,000 pieces) worth fl.37,500 and identical packs of identical numbers coast-cambayen (also an important cloth for African slave trade) worth fl.72,000 were destined for the Netherlands.

Thus the European trade and its demand for Indian textiles kept on expanding which presumably led to the expansion of production. Unfortunately it is difficult to measure the actual size of the net expansion on the basis of sources available at present. The exports to Europe and South-east Asia under the aegis of the European Companies led to considerable reduction in the relative share of other markets and shift in the importance of other commodities. For example Iran no longer remained the principal market for Indian indigo and chintz. But a relative decline is not the same as absolute decline. It is not clear that the European demand diverted textiles from other markets. If no diversion occurred, then the development of Europe's trade with India in the seventeenth

257. See Chapter 10.

258. Van Dam, II(2), p.218.

259. Ibid.
century could have had only a positive effect on Indian production.

**Size of Labour Force in Textile Production**

There is no way, as we have just said, of measuring the total increase in textile production over the fifteenth and sixteenth centuries. What we can do is to collect some data from European sources about the number of persons employed in the industry, especially weaving. In 1631-35, Antonio Bocarro estimated that 30,000 looms were operating in Thatta. This was possibly an error for 3000 because Fremlen and Spiller reported in 1635 that there were 3000 families of weavers at Thatta. S. Manrique (1640-41) estimated the figure to be over 2000 looms. It is argued that in 1630’s there must have been at least 12,000 families of weavers @ 4.5 persons per family a total population of 54,000 was engaged in weaving in this small province.

Similarly Marrique (1640) tells us about Benares, “The City is also very rich on account of the abundance of its merchandise, especially its very fine cotton cloth, which is being woven continually on seven thousand looms in the town itself and in its suburbs.” If we consider

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261. Ibid.


each family had one loom and each family consisted of 4.5 persons then it would seem that in 1640 Benares had 7000 families of weavers and a total population of 31,500 was employed in weaving in the city of Benares alone, which would suggest that weaving was one of the major crafts of Benares, and conversely a sizeable section of total population was involved in textile production. In contrast the population of weavers had declined by 1827. According to one calculation done for Bengal, it has been argued that the Dutch Company alone accounted for 3.37 per cent and 4.43 per cent of the total work force of 1 million in the textile sector in Bengal.

There is no doubt that, as we said in the beginning of this thesis, the textile industry in its various branches, constituted a major feature of the Indian economy in the sixteenth and seventeenth century. It created large employment for spinners and weavers in the villages, and was indoubtedly an important engine of urban expansion in Mughal India. It also provided the base for export of textile products, which in turn constituted a major element in the international trade of the times. These facts provide an indispensable backdrop to any serious study of the travails of this industry in colonial times.
