

The British Silk Connection: The English East India Company's Bengal Silk Enterprise, 1757 – 1812

My PhD investigates the English East India Company's (EEIC) silk manufacturing activities in Bengal in the second half of the eighteenth century. The research project studies the connection between the British and Bengal silk industry, which was created by the EEIC in the attempt to substitute the importation of raw silk from Italy, Turkey and Mediterranean Europe by Bengal raw silk and to widen the Company's silk trade.

The project analyses the Company's silk manufacturing activities in Bengal. It situates the late eighteenth-century development of Bengal silk industry in the context of the EEIC's policies after it resumed political and administrative power over Bengal in 1757. The analysis of the Company's silk manufacturing activities allows to sketch a more comprehensive picture of the Company's role in the pre-modern world economy and contributes to the research on the influence of the European trading companies.

The main argument of my PhD is that in the late eighteenth century the EEIC decided to expand its trade in Bengal raw silk as part of its efforts to transfer its Indian territorial revenues to Britain.¹ In most of the Company correspondence and documents from 1760s to 1770s raw silk was considered to be one of the 'choicest' goods with potentially high returns.² The question that arises is; what did underpin these expectations and induce the Company to become a silk manufacturer in Bengal? My thesis argues that the EEIC's interest was induced by the British government's support of the domestic silk industry as well as by the changes to the EEIC's

¹ Huw V. Bowen, *Revenue and Reform: The Indian Problem in British Politics, 1757-1813* (Cambridge: Cambridge University Press, 1991), p. 21.

² For instance IOR/E/4/621: 'Mr Wiss, Superintendent of Silk Trade, in Bengal Despatches, 24th November 1772, India Office Records and Private Papers', pp. 379-80.

finance in the aftermath of the Battle of Plassey (1757) and the assumption of the diwani of Bengal, Bihar, and Orissa.

Never a leader in international markets, still from the seventeenth up to the beginning of the nineteenth century, British silk products were among the principal export goods of the British Isles. The weaving sector was dependent on imports of raw silk and its consumption was not trivial. Mitchell's historical statistics show that in the 1750s and 1760s raw silk was quantitatively the most important raw material imported into Britain and the fastest growing as well.³ The British government favoured securing the supply of raw silk from colonial settlements. The Company was keen to furnish the demand of the British silk weavers with Bengal raw silk, especially as it was dependent on export trade for transferring the diwani, or in other words tax revenues, to Britain. In the 1760s and 1770s the EEIC considered trade in Bengal raw as essential channel for remitting these revenues.

In contrast to the cotton industry, the eighteenth-century Indian silk production was not at the technological cutting edge. Indian raw silk production was of lower quality and was considered too coarse and unequal in skeins to be used by the European silk manufactures and weavers. Therefore, in order to gain a higher market share in Britain, the Company needed to increase the quality of the Bengal raw silk. To achieve this goal the Company resolved to alter the processes of raw silk production and draw on knowledge transfer from Europe. The Company decided to rely on knowledge transfer by adopting the Piedmontese system of silk reeling as it was considered the most advanced in Europe.⁴

³ B. R. Mitchell, *British Historical Statistics* (Cambridge: Cambridge University Press, 1988), p. 463.

⁴ LSE Archives, W7204, East India Company. *Reports and Documents Connected with the Proceedings of the East-India Company in regard to the Culture and Manufacture of Cotton-wool, Raw Silk, and Indigo in India* (London, J.L. Cox, 1836) p. xi.

The project draws on the scholarship on the English East India Company, eighteenth century political-economy and trade, and the literature on knowledge transfer, principal-agent problem, hold-up problem, contract enforcement and factor prices.

The title of the project aims to point to the British or rather EEIC's agency in acting as an agent of change in order to accommodate the silk production in Bengal to the demand of the British silk weaving sector. The research maintains that the Company's venture into the silk industry was informed principally by profit consideration, despite political economy considerations being also important. It investigates the approach the Company took in altering the production processes of silk manufacturing. It particularly focuses on the issue of knowledge transfer as well as it raises other issues.

First, the research analyses the processes of production of raw silk, sericulture and silk reeling, prior to the EEIC's direct involvement in Bengal silk industry. I answer the question whether Bengal could be called the 'silk factory' of the pre-modern world since India was the 'textile factory' of the world.⁵ I examine the knowledge of the 'best practice' of sericulture and silk reeling in Bengal and compare it to Italy and China, the eighteenth-century world leaders in raw silk manufacturing. I study the quality of the Bengal raw silk and the systems of organization of labour and of procurement. I evaluate whether the systems of raw silk production and procurement had negative impact on the quantity and quality of raw silk the Company was able to procure.

Second, the research studies the changes to silk reeling adopted in the late eighteenth century by the EEIC. I focus on the steps the Company undertook in the Bengal silk industry

⁵ Giorgio Riello and Tirthankar Roy, 'Introduction: The World of South Asian Textiles, 1500-1850', in Giorgio Riello and Tirthankar Roy (eds.), *How India Clothed the World* (Leiden: Brill, 2009), p. 6; and Giorgio Riello, 'The Indian Apprenticeship: The Trade of Indian Textiles and Making of European Cottons', in *Ibid.*, p. 309.

when attempting to implement the Piedmontese methods of silk reeling. I analyse the technical part of setting up silk filatures in Bengal, and the technologies and equipment imported from Europe. I explore the changes to the organization of labour and the role Italian silk specialists had in setting up silk filatures, implementing and supervising the new method of reeling, and in training of labour in Bengal.

Third, the project analyses the problems the EEIC faced when attempting to change the methods of reeling. I explore the factors that constituted ‘special environment’ of Bengal and Piedmont and I study how these factors hindered the knowledge transfer.⁶ I am especially focusing on factor prices.⁷ I also discuss the principal-agent problem.⁸ I explore how successful was the Company in attempting to solve this problem through vertical integration, or in other words by setting up silk filatures. Moreover, I explore the possible explanation for the lack of investment into sericulture. The research argues that the EEIC faced hold-up problem in

⁶ Nathan Rosenberg, ‘Economic Development and the Transfer of Technology: Some Historical Perspectives’, *Technology and Culture* 11, 1970, p. 575

⁷ Likeness of factor prices is commonly cited as a factor crucial to the successful implementation of foreign technology, thus analysing factor endowments and price ratios in Bengal and Piedmont will be essential, Stephen N. Broadberry, Bishnuprya Gupta. Lancashire, India, and Shifting Competitive Advantage in Cotton Textiles, 1700-1850: The Neglected Role of Factor Prices. *Economic History Review* 62 (2), 2009, pp. 279-305.; Yurio Hayami, V., W. Rutan. Factor Prices and Technical Change in Agricultural Development: The United States and Japan, 1880-1960. *Journal of Political Economy*, vol. 78 (5), 1970, pp. 1115-1141.

⁸ The principal-agent problem denotes the dilemma of how to motivate the agent to act in the best interest of the principal. It arises due to asymmetry of information or due to the interests of principal and agents being in conflict. See for instance Avner Greif, ‘The Fundamental Problem of Exchange: A Research Agenda in Historical Institutional Analysis’, *European Review of Economic History*, 4, 2000, pp. 251-84; Sanford J. Grossman, Oliver D. Hart, ‘An Analysis of the Principal-Agent Problem’, *Econometrica* 51 (1), 1983, pp. 7-46.; Ray Rees, ‘The Theory of Principal and Agent, Part I’, *Bulletin of Economic Research* 37 (1), 1985, pp. 3-26.

sericulture.⁹ The Company was deterred from investing into sericulture as such an investment might be easily expropriated under the putting-out system.

Last, the research project explores the impacts of the adoption of new reeling practices on the Company's trade with Bengal raw silk. I compare the quantities of Bengal raw silk imported to Britain before and after the adoption of the Piedmontese system of reeling. I study the share of Bengal raw silk on the total imports of raw silk to Britain in the late eighteenth century. I investigate the sales and prices of the silk on the British market and evaluate whether the Piedmontese method of reeling led to increase in the price of the Bengal raw silk on the British market.

The research project consults primary as well as secondary sources in the British Library, Goldsmiths Library, LSE Library, National Arts Library and The National Archive. It uses particularly the resources of the India Record Office to analyse the steps undertaken by the EEIC in the Bengal silk industry. These resources also provide trade data. In order to analyse the political-economy environment in Britain I consult contemporary treatises, pamphlets and newspaper articles. A collection of such resources is held by the Goldsmiths Library, and the database "Making of the Modern World" enables me to access items held by the Kress Library, Harvard.

The research adopts mostly qualitative approach, which is instrumental for exploring the influence of the British political-economy on the EEIC's policies. This approach also enables me

⁹ Hold-up problem is a situation in which an investor is deterred from making an investment, which would be in the best interest of all parties of a trading relationship, by the possibility that it would be expropriated by its trading partner. Benjamin Klein, Robert G. Crawford, Armen A Alchian,., 'Vertical Integration , Appropriable Rents, and the Competitive Contracting Process', *Journal of Law and Economics* 21 (2), 1978, pp. 297-326, Oliver E. Williamson, 'Transaction- Cost Economics: The Governance of Contractual Relations', *Journal of Law and Economics* 22 (2), pp. 233-261; or Rachel E. Kranton and Anand V. Swamy, 'Contracts, Hold-up, and Exports: Textiles and Opium in Colonial India', *American Economic Review* vol. 98 (3), 2008, pp. 967-89.

to analyse the steps undertaken by the Company in the Bengal silk industry, particularly in respect to the knowledge transfer. When analysing knowledge transfer I draw particularly on Joel Mokyr, Tirthankar Roy and Maxine Berg.¹⁰ When analysing the challenges to the knowledge transfer, the research draws on Yurio Hayami and V. W. Rutan's paper about the impact of factor prices on technology transfer.¹¹ Moreover, I also draw on Nathan Rosenberg's, and Liliane Hilaire-Perez and Catherine Verna's work about the influence of the socio-economic environment on the technology transfer.¹² Rachel E. Kranton and Anand V. Swamy's paper is instrumental for analysing the principal-agent problem and hold-up problem.¹³

¹⁰ Joel Mokyr, *The Gifts of Athena: Historical Origins of the Knowledge Economy* (Princeton: Princeton University Press, 2002); The research dealing with the pre-modern period usually brings evidence of a knowledge transfer from Asia to Europe. See for instance Maxine Berg, 'Useful Knowledge, 'Industrial Enlightenment, and the Place of India', *Journal of Global History* 8(1), 2013, pp. 117-141; Giorgio Riello, 'Asian Knowledge and the Development of Calico Printing in Europe in Seventeenth and Eighteenth Century', *Journal of Global History* 5 (1), 2010, pp.1-28. Tirthankar Roy presents an interesting discussion of knowledge creation in pre-modern India, Tirthankar Roy, 'Knowledge and Divergence from the Perspective of Early Modern India', *Journal of Global History* 3, 2008, pp. 361-386.

¹¹ Hayami, and Rutan, 'Factor Prices and Technical Change', pp. 1115-1141.

¹² Rosenberg, 'Economic Development and the Transfer of Technology', pp. 550-575; Liliane Hilaire-Perez and Catherine Verna, 'Dissemination of Technological Knowledge in the Middle Ages and the Early Modern Era: New Approaches and Methodological Issues', *Technology and Culture*, 47 (3), 2006, pp. 536-565.

¹³ Kranton and Swamy, 'Contracts, Hold-up, and Exports', pp. 967-89.