Cotton Textile Handicraft and the Development of the Cotton Textile Industry in Modern China[1]

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I

Little is known about the evolution of early industrial enterprise and its relationship to handicraft in modern Asian economic history. What has been written about handicraft has stressed its early demise and subsequent impoverishment of the peasant when trade with advanced countries developed. Between 1840 and 1937 cotton textile handicraft in China was an important source of employment and income for the peasant, and the cotton textile industry which emerged after 1890 became the leading industry in the modern sector of the economy. This essay describes the evolution of this handicraft industry, gives several reasons why the cotton textile industry did not advance rapidly, and shows implications for industrial development in modern China from the relationship that existed between handicraft and the emerging cotton textile industry.

The supply of cotton steadily expanded from the late Sung and early Yuan periods (960–1269; 1271–1368). In north China cotton first appeared in Shensi and spread gradually to Shantung, while in the south it was transplanted from Hainan Island to the China coast and spread northwards toward the Yangtze Valley region. Government demand for military uniforms encouraged greater cotton cultivation in the north.[2] During the Yuan and Ming periods officials instructed farmers to adopt improved techniques of seed care, planting, and harvesting.[3] Increased taxation in the late Ming period was also a powerful inducement to compel peasants to grow more cotton.[4] Gradual changes in taste, the steady growth of towns, and the extension of money relationships increased demand for cotton cloth.

On the supply side technical advances in both rice and cotton farming made for increased cultivation and greater yield. More land could be devoted to cotton because quick-ripening Champa rice seeds became more widely used,

[1] The author wishes to thank Mr D. M. B. Butt for critical comments of early drafts of this paper. Naturally, the author alone is responsible for errors and omissions.

[2] Nishijima Sadao, 'Mindai ni okeru Momen no Fukyu ni tsuite' (Diffusion of Cotton Production during the Ming Period), *Shigaku Zasshi*, LVII, no. 4 (1958), 8–9.

[3] For example, see 'Directions for the Cultivation of Cotton, Especially in the District of Shanghai' translated from the *Nung-cheng ch'uan-shu* (Encyclopaedia of Agricultural Policy) contained in Rev. James Summers (ed.), *The Chinese and Japanese Repository* (London, 1864), pp. 199–209.

[4] Terada Takanobu, 'Mindai Soshu Keino no Nōka Keizai ni tsuite (Agricultural Household Economy of the Soochow Plain during the Ming Period), *Tōyōshi Kenkyū* (June 1952), pp. 1–26: Tanaka Masatoshi, 'Minmatsu Shinsho Kōnan Nōson Shūkōgyō ni kansuru ichi Kōsatsu' (A Survey of Rural Domestic Industry in the Southern Yangtze Delta in the Late Ming and Early Ch'ing Period), *Tōyōshi Ronsō* (Tokyo, 1960), pp. 604–5.

thus permitting double cropping and freeing more land for cash crops.[1] During the Ming period there was better rotation of land between rice and cotton, improved care of seeds before planting, early planting before spring rains, development of better cotton seeds, use of new fertilizers, better irrigation methods, and improved plant protection from insects.[2] These advances were neither uniform throughout the country nor occurred overnight. They represented the culmination of decades of experience learned by different peasants, passed from one generation to another, and spread by word of mouth or written text from one province to another.

Increased urban demand and greater inter-regional trade during the Ming period encouraged the development of cotton textile handicraft,[3] and improved technology at various stages of cotton yarn and cloth production increased supply. A technical improvement in cotton ginning encouraged study of how to speed up cotton bowing, preparing for spinning, and making the warp and woof for weaving. The most impressive technological changes seemed to have clustered in the late Ming period. They involved the development of better ginning implements, and inproved bowing of cotton, the introduction of the foot-treadle spinning frame of three or four spindles, and the construction of foot-pedal weaving looms.[4] But widening of the market and more efficient production of yarn and cloth did not lead to specialization of tasks within different households or areas. The typical production unit, the household, produced yarn and cloth for exchange with cotton and consumer goods. These were supplied by middlemen who competed with one another to buy cloth and sent it to cities for dyeing and fulling.

Before 1840 cotton textile handicraft had achieved its highest stage of development in Kiangsu province in central China.[5] By 1800 her villages and cities were famous throughout China for cloth production. The region's sandy, loamy soil was excellent for growing cotton. Spinning was easy because of high humidity. A large rural population provided abundant labour. Kiangsu had easy access to regional markets through the Yangtze River, the Grand Canal, and the sea coast. Considerable cotton was grown in the province, although as the industry grew, more cotton had to be purchased from north China.

[1] Ho Ping-ti, 'Early-ripening Rice in Chinese History', *Economic History Review* (Dec. 1956), pp. 200–18.

[2] Amano Motonosuke, *Chūgoku Nōgyōshi Kenkyū* (A Study of Chinese Agricultural History), (Tokyo, 1962), pp. 633–42.

[3] Nishijima Sadao, 'Shina Shoki Mengyō Shijō no Kōsatsu' (A Survey of Early Cotton Markets in China), *Tōyō Gakuho* (Oct. 1942), pp. 120–44; Nishijima Sadao, 'Chūgoku Nōson no Kōgyō Kōsatsu, 16.17 seiki o chūshin to suru' (A Survey of Chinese Village Industry in the 16th and 17th Centuries), *Rekishigakū Kenkyū* (Jan. 1949), pp. 16–26.

[4] A good discussion of technical change in cotton textile handicraft can be found in Shih Huang-ta, 'Shih-lun Sung, Yuan, Ming san-tai mien-fang chih sheng-ch'an kung-ch'u fa-jan te li-shih kuo-ch'eng' (Evolution of Spinning and Weaving Implements during the Sung, Yuan, and Ming Periods) *Lishih Yen-chiu*, no. 4 (1957), pp. 20–42. See also Hsü Kuang-ch'i, *Nung-cheng ch'uan-shu* (An Encyclopaedia of Agricultural Policy), I (Peking, 1956), 699–720, for techniques involving preparation of cotton and spinning yarn; Wang Ch'en-chüan, *Nung-shu* (An Agricultural Compendium), (Peking, 1956), pp. 507–15 for technology of weaving.

[5] Ch'üan Han-sheng, 'Ya-pien chan-cheng ch'ien Kiangsu te mien-fang chih-yeh' (The Cotton Textile Industry of Kiangsu before the Opium War), *Ch'ing-hua Hsüeh-pao* (Sept. 1958), pp. 1–11.

Perhaps the most important factor which enabled Kiangsu to gain a decisive lead over the rest of the country was the early transfer (*c.* twelfth century) of cotton cloth-making techniques to Kiangsu from Hainan Island. Hainan possessed a more advanced handicraft industry in terms of spinning and weaving technology, but it failed to grow in size because of its isolation from the mainland markets.

In the early Ch'ing period (*c.* mid-eighteenth century) a marketing system had evolved in which merchants in central China financed the assembly, processing, and shipment of cloth from Kiangsu to central and north China provinces.[1] Brokers were employed to supply raw cotton to peasant households in exchange for cloth which was then shipped to the cities on the Soochow plain for fulling and dyeing. They also employed agents who arranged the fulling and dyeing of cloth.[2] As demand and supply for cloth increased, more and more fulling and dyeing sheds arose to handle the large volume of cloth streaming in from the countryside.[3] Finished cloth was then sold throughout China and even shipped to Canton where it was purchased by the East India Company whose ship officers referred to it as Nankeens. Nankeens, tea, and silk gave China a favourable trade balance at Canton during the eighteenth century, and exports of rolled cloth rose as high as 3·3 million pieces in 1819.[4] Other regions also produced yarn and cloth, but only for local consumption. They did not possess the resource advantages or technical advances that marked handicraft cloth production in Kiangsu. They had to ship cloth at greater cost and found it difficult to compete with Kiangsu cloth which entered their provinces in great quantities.

II

After the Opium Wars new regional production and trade developed on the basis of different specialization of land and labour. Foreign trade created new production possibilities between hand spinning and weaving which brought about a structural and locational transformation of the cotton textile handicraft industry. Between 1840 and 1860 the period when treaty-ports were opened, the sudden inflow of foreign textiles only brought uncertainty to the Kiangsu handicraft industry. In areas where production was for local consumption,

[1] A description of the initial development of this marketing system is contained in Terada Takanobu, 'Sen-shō Chihō ni okeru Toshi no Mengyo Chōnin ni tsuite' (Cotton Merchants in the Urban Centres of Soochow and Sung-kiang), *Shirin* (Nov. 1958), pp. 50–60.

[2] These agents were called *pao-t'ou*. Their activities in the fulling industry have been ably described and analysed in Yokoama Suguru, 'Shindai ni okeru Tanfugyō no Keiei Keitai' (Structure of the Cotton Fulling Industry in the Ch'ing Period), *Tōyōshi Kenkyū* (Dec. 1960), pp. 23–36 and (Mar. 1961), pp. 19–36; also 'Shindai ni okeru Hotosei no Tenkai-Tanfugyō Suiten Katei ni tsuite' (Development of the Pao-t'ou System during the Ch'ing Period and the changing character of the Fulling Cloth Industry), *Shigaku Zasshi* (Jan. 1962), pp. 45–72 and (Mar. 1962), pp. 42–56.

[3] In 1966 Soochow had over 1,000 fulling sheds; in 1727 the number of fulling workmen was estimated around 100,000. In 1720 there were 300 dyeing mills in Soochow alone employing 10,000 workers, in 1730 it had increased to 450 with 19,000, and in 1833 there were 2,500 employing 50,000 people. See Liu Yung-ch'eng, 'Lun Ch'ing-tai ku-yung lap-tung' (An Essay on Wage Labour during the Ch'ing Period), *Li shih Yen-chiu*, IV (1960), 109–10.

[4] H. D. Fong, *Cotton Industry and Trade in China* (Tientsin, 1932), p. 286.

such as Amoy in Fukien and Canton in Kwangtung provinces, spinning and weaving declined.[1] The greatest share of imports flowed into Kiangsu, yet no firm trend of increase or decline in trade volume can be observed. When quantities of cotton yarn and woollen and cotton piece goods imports from 1843 to 1856 are charted, yarn and piece goods merely fluctuated cyclically (see Chart 1 below).

Fluctuations in the cotton harvest account for this pattern of textile imports. When Western textiles first appeared in villages west of Shanghai, observers reported that their prices undercut those of native handicraft producers by two-thirds.[2] This price undercutting was temporary and occurred only when cotton prices rose because of a poor harvest. Higher raw cotton prices meant higher costs for spinners and weavers, and cotton goods imports naturally had the edge in price and their quantities rose. But as soon as cotton harvests improved and prices fell, weavers' costs declined and most of the market reverted to them.[3]

The important period of handicraft development occurs between 1868 and 1900 when significant changes in composition of textile imports occurred, reflecting a transformation within the cotton handicraft industry. This is seen by charting cotton yarn and cloth imports in quantity terms on semi-log graph for the period 1868–1930 and comparing the rate of change over time (see Chart 2, below).

Yarn imports rise rapidly after 1873, level off after 1900, and decline rapidly after 1920. Cotton cloth imports increase more slowly, taper off after 1890, and slowly decline after 1925. Yarn imports increase forty-fold by 1900 while cloth imports rise only two-fold. Yarn imports fluctuate mildly compared to cloth imports.

Marketing difficulties, consumer preference for native cloths, and regional specialization limited the widespread circulation of Western cloth piece goods. Until the Cheefoo negotiations of 1877, a foreign commodity passing from the Western trader into Chinese middleman hands outside the extra-territoriality zone of the treaty port was taxed a transit surcharge, the *likin*, like any article produced and sold in the domestic market.[4] Western merchants in the 1870's

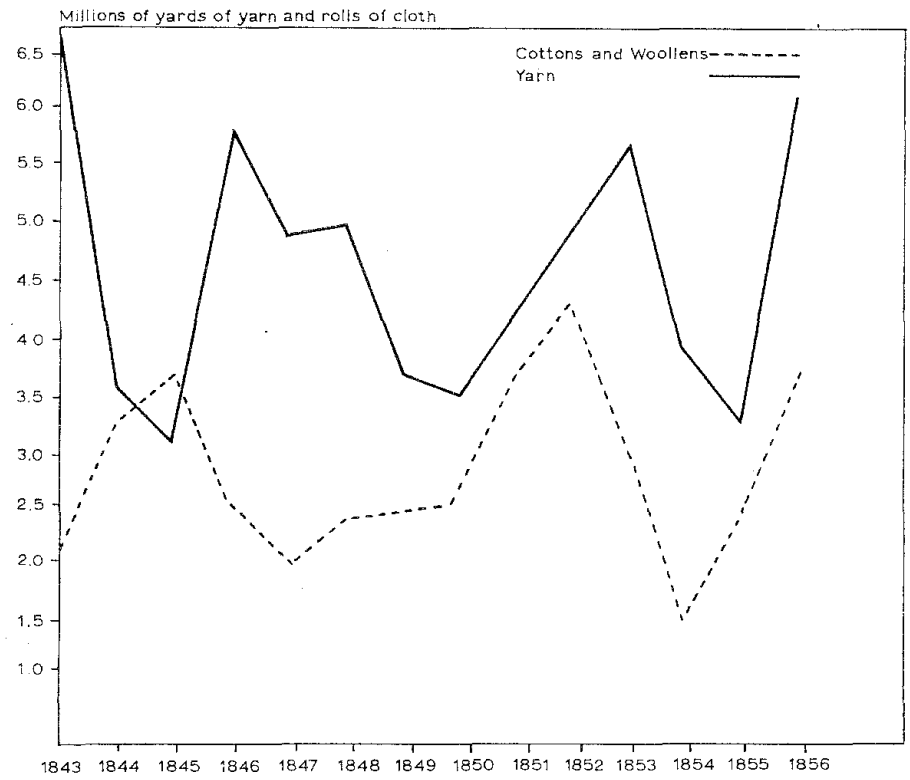
[1] Native yarn exports from Ningpo to Amoy ceased in 1843 when Western merchants sold their yarn and cloth at lower price in Amoy. See P'eng Chi-i, *Chung-kuo chin-tai shou-kung yĕh-shih tzu-liao* (Materials on the History of Modern China's Handicraft Industries), I (Peking, 1957), 494. Henceforth to be referred to as *CCSYST*. The decline in spinning and weaving in Canton was chiefly due to the failure of handicraft producers to develop an internal market in Kwangtung and interior provinces. See Ubukata Naokichi, 'Nankin Momen Kōbōshi' (History of the Rise and Decline of 'Nankeen' Cottons), *Tōa Ronsō* (July 1939), pp. 274–5.

[2] *Op. cit. CCSYST*, p. 495.

[3] George Wingrove Cooke, *China and Lower Bengal, Being 'The Times' Correspondence from China in the years 1857–58* (London, 1861), p. 199. Cooke reports, 'the Chinese also used to beat us in cotton exported to their northern provinces. The failure of the cotton crop has given us just at present rather a monopoly of the market in Shantung, Shinkiang, and Corea, but with a good crop of cotton in China we shall probably lose this again and be undersold by homespun goods.'

[4] Sir Robert Hart in 1901 neatly outlined the privileges of the foreign traders. 'They may import foreign goods into China, and export native products from China, through any one of some thirty treaty ports, on payment of a tariff duty amounting to what was 5 per cent on the values of 1860; and they may take foreign goods to, and bring native products from, any place inland on payment of an additional half tariff duty, as Transit Due' (*These From the Land of Sinim* (London, 1901), p. 75).

Chart 1. English cotton and woollen imports to five treaty ports



Source: P'eng Chi-i, *Chung-kuo chin-tai shou-kung yeh-shih tzu-liao* (Peking, 1957), p. 491.

complained that these surcharges raised their prices higher than those of local goods.[1] but they were still dependent upon native traders to move their goods inland. Another difficulty was that most inland markets were controlled by local guilds who consorted with officials to pay a lower *likin* charge by paying in advance.[2] This enabled merchant guilds to sell domestic products at lower prices than those distributed by foreign merchants.

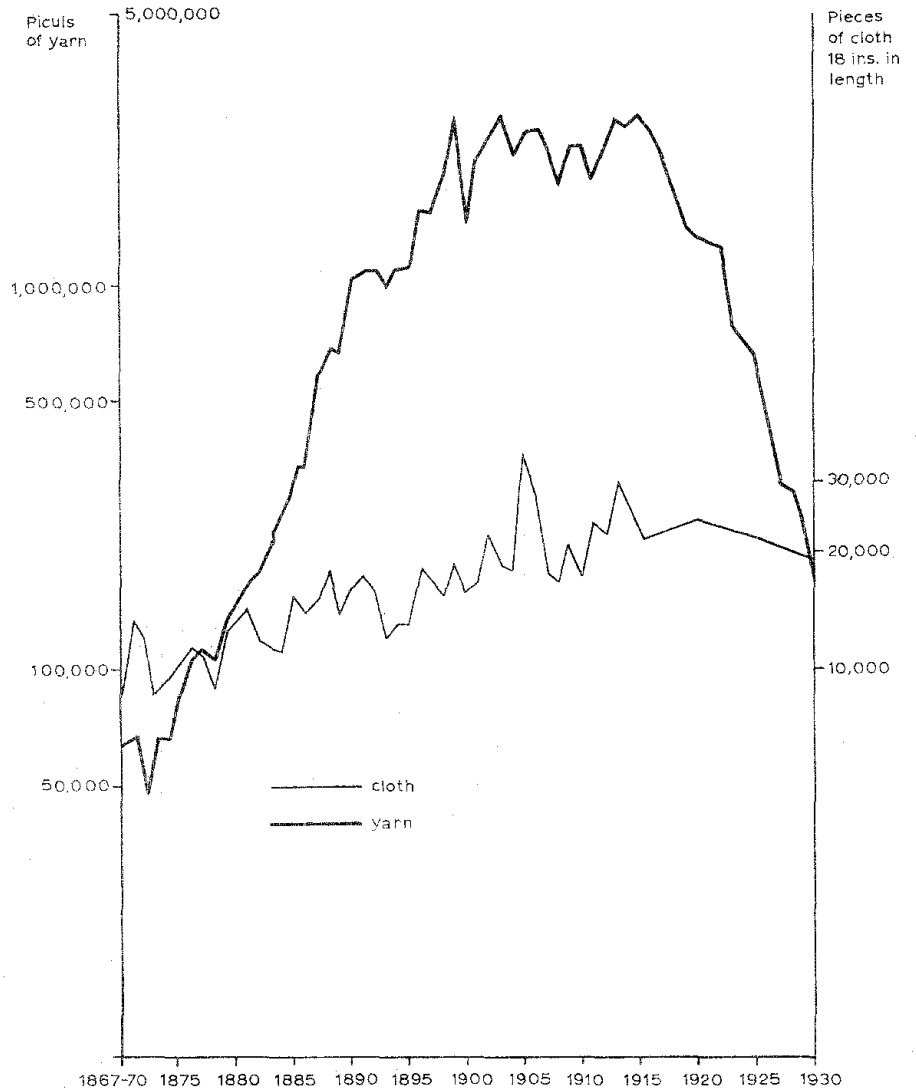
A large share of imported cloth consisted of special cotton pieces of high quality; these goods were expensive and only the wealthy in the treaty port cities could afford to buy them.[3] Pieces goods more price competitive with handicraft-produced cloth sold poorly because the peasant and artisan still

[1] *Despatches from U.S. Consuls in Shanghai, 1847–1906, January 31–July 17, 1877* (Washington, 1947), A Letter on the Chefoo Convention to the Chamber, London Committee, Shanghai, 15 June 1877, p. 3.

[2] *Despatches from U.S. Consuls in Ningpo, January 14, 1881–June 22, 1885* (Washington, 1947), Letter dated 9 Jan. 1882 to Walker Blaine. This reply to a State Department query of why cotton piece goods exports to south China failed to increase reported that 'Officials tell native merchants to apply at the *likin* station where arrangements will be made for you to send them (commodities) at a lower rate. In this way (reports the Chinese official) you will be able to sell your goods at a profit while the foreigner will have to sell his at a loss.' Chinese guilds supervised most marketing, and these were decades when anti-foreign feeling ran high. Officials and merchants must have found this co-operation mutually to their advantage.

[3] For a mention of the many consular reports of the late nineteenth century citing the fact that Western cloth circulated primarily in large coastal cities where it was purchased by upper income groups see Koyama Masaki, 'Shinmatsu Chūgoku ni okeru Gaikoku Menseihin no Ryunyū' (The Influx of Foreign Cotton Goods in the Late Ch'ing Period), *Kindai Chūgoku Kenkyū*, IV (Tokyo, 1960), 9–29. The writer owes a substantial intellectual debt to the author for the ideas and evidence contained in this essay.

Chart 2. Cotton yarn and cloth imports to China (1867–1930)



Source: Hatano Yoshihiro, *Chūgoku Kindai Kōgyō shi no Kenkyū* (Kyoto, 1961). (Data taken from table on p. 515.)

preferred the durable, heavy padded clothing and coarse native cloth. Western observers in 1882 commented that 'China is essentially an agricultural country, and its tillers in many parts getting two crops a year, grain and cotton, are too exclusively labouring men not to prefer their homegrown native cloth made at no expense within their doors, from material grown on their own land '.[1]

Cotton cloth was only imported where competition with handicraft weavers was minimal and exchange with regional products was possible. Actually, the largest percentage share of cotton (averaging slightly over 40 per cent of total cotton cloth) cloth imports between 1881 and 1910 flowed into north China.[2] These imports exchanged for exports of agricultural products and

[1] China Mail Office, 'The Foreign Trade of China during 1880', *The China Review* (July, 1881–June, 1882), p. 5.

[2] *Op. cit.* Koyama Masaki, p. 8. Data in this paragraph obtained from his Table 1.

minerals. The next largest, averaging over 20 per cent of cloth imports, entered central China of the upper Yangtze Valley area and exchanged with food and cash crops. Handicraft producers in Kiangsu retained control over their provincial market despite easy entry of imports because handicraft was well-developed and efficient. Cloth imports to Kiangsu fluctuated greatly, averaging a little over 10 per cent of cloth imports when seasonal fluctuations are removed. Fluctuating cotton prices account for the fluctuating imports. The residual cloth imports went to Chekiang, Fukien, Kwangtung, and south-west China; these amounts were very small because these areas only slowly developed an export trade and marketing costs were higher.

III

Between 1872 and 1885 the import value of yarn and cloth fell by more than 30 per cent, yet the quantity of yarn imported increased about seven times more than cloth.[1] Three reasons account for this: Chinese cotton prices gradually rose, the price of foreign yarn fell far below native yarn, and quality was far superior. Between 1867–1871 and 1887–1891 cotton imports on a four-year average dropped from 280,662 to 140,010 piculs, whereas cotton exports for the same period rose from 35,384 to 286,132 piculs.[2] China became a net exporter of cotton for the first time around 1890. Until 1883 the raw cotton supply was fairly inelastic because of poor ginning methods, but in that year foot-pedal ginning machines were imported from Japan, capable of ginning up to 300 catties of raw cotton a day.[3] This coincided with increased cotton demand from India, Japan, and Europe which encouraged a rise in exports. However, some time had to elapse before new ginning machines could increase supply rapidly. The result was a 'continuous rise in raw cotton prices (which) also increased the cost of native yarn and reduced the profits of handicraft producers'.[4] Imported yarn gradually became cheaper to buy than domestic yarn. In 1887 the Chinese Customs Bureau in Newchwang, Manchuria, reported that 300 catties of Western yarn sold for 57 taels while 300 catties of native yarn sold for 87 taels.[5] Foreign yarn had greater tensile strength than domestic yarn.[6] Substituting foreign yarn for native yarn, or combining with native

[1] Yen Chung-p'ing, *Chung-kuo mien-fang chih shih-kao* (A Draft History of the Chinese Cotton Textile Industry), (Peking, 1963), p. 56. Henceforth *CMCS*.

[2] *Ibid.* p. 64. A picul is equivalent to 133⅓ lbs.

[3] Koyama Masaki, 'Shinmatsu Chūgoku no okeru Mensei Kikai no Donyū' (Import of Ginning Machines in the Late Ch'ing Period), *Tōyōshi Ronsō* (Tokyo, 1960), pp. 279–81. Between 1887 and 1900 cotton exports rose at the average annual rate of 12·8 per cent. Calculated from data obtained in Nung Yeh, 'Shih-chiu shih-chi hou-pan Chung-kuo nung-yeh sheng-ch'an te shang-p'in hua' (Commercialization of China's Agricultural Products during the Latter Half of the Nineteenth Century), *Ching-chi Yean-chiu*, III (1956), 122–3.

[4] Quotation from Yen Chung-p'ing, 'Chung-kuo mien-yeh chih fa-jan' (Development of China's Cotton Textile Industry), *Chung-kuo chin-tai shih lun-tsung* (Collected Essays on Moderne Chinese History) (Taipei, 1958), II 247. For accounts of this same tendency see *op. cit. CMCS*, p. 65; Shanghai Dōbuin Kai, *Shina Keizai Zensho* (A Compendium of Studies on the Chinese Economy), XI (Tokyo, 1909), 524.

[5] *Op. cit. CMCS*, p. 63. A catty is roughly 1⅓ lbs.
Op. cit. Shina Keizai Zensho, p. 42.

yarn, reduced the cost of handicraft weaving and produced cloth which was more glossy and durable.

Between 1870 and 1900 the traditional handicraft industry adjusted to these changes by scrapping spinning and concentrating on weaving.[1] Merchants, money-lenders, and even officials supplied working capital and organized cloth production on a new basis. Managers were employed to supply foreign yarn and cash to weavers in exchange for their cloth.[2] Spinning in the household declined greatly, although it did not disappear completely, and weaving of native cloth, or *t'u-pu*, in a single establishment under the putting-out system organized by a merchant-capitalist increased.[3] Many areas that formerly produced for local consumption began to produce for distant markets. I have constructed two maps showing decline of spinning and weaving and the emergence of new centres which specialized chiefly in cloth production and export for the period 1870 to 1910. Map 1 shows three kinds of decline according to province, district, and city: [4]

(1) Household handicraft yarn production partially or completely collapsed.

(2) Household handicraft cloth partially or completely collapsed (70–90 per cent).

(3) Household handicraft yarn and cloth partially or completely collapsed (70–80 per cent).

Map 2 shows the emergence of handicraft on the new putting-out basis for the same areas: [5]

(1) Handicraft yarn production under putting-out arrangement emerges.

(2) Handicraft cloth production under putting-out arrangement emerges.

(3) Handicraft yarn and cloth production under putting-out arrangement emerges.

Traditional yarn production disappeared in Shensi, Kweichow, and sections

[1] Hatano Yoshihiro, *Chūgoku Kindai Kōgyō shi no Kenkyū* (Studies on the Early Industrialization of China) (Kyoto, 1961), p. 524.

[2] See *op. cit. CMCS*, pp. 59–77; Chen Shih-chi, 'Chia-wu chan ch'ien chung-kuo nung-ts'un shou-kung mien-fang chih-yeh ti pien-hua ho tru-pen chu-i sheng-ch'an ti ch'eng-chang' (Rural Cotton Textile Handicraft and the Development of Capitalist Production Before the First Sino-Japanese War), *Li-shih Yen-chiu*, II (1959), 33–4; Fan Pai-ch'uan, 'Chung-kuo shou-kung yeh tsai wai-kuo tzu-pen chu-i ch'in-juh hou ti tsao-yu he ming-yuan' (The Fate of Chinese Handicraft after the Encroachment of Foreign Capitalism), *Li-shih Yen-chiu*, III (1962), 101–8; Shou-Eng Koo, *Tariff and the Development of the Cotton Industry in China, 1842–1937*, submitted as Ph.D. dissertation in Faculty of Political Science, Columbia University, 1961, chap. III; *op. cit.* Koyama Masaki, pp. 3–108; *op. cit.* Hatano, Yoshihiro, pp. 521–8.

[3] The technological reason for this new handicraft development holds for this period as it does for the early 1930's when two British textile engineers surveyed the textile industries in China. 'An interesting feature of the Cotton trade in China is the development of small weaving establishments which purchase their yarns from the spinning firms who often spin much more yarn than they can possibly weave. This development is due to the fact that while a 'power-spinner' produces about six hundred times as much yarn as a 'hand-spinner', on the other hand a 'power-weaver' only produces three to four times as much as a 'hand-wreave'. See A. F. Barker and K. C. Barker, *The Textile Industries of China: their present position and future possibilities* (Shanghai, 1934), p. 18.

[4] Source used was *op. cit. CCSYST*, I, 206–20; Li Wen-chih, *Chung-kuo chin-tai nung-yeh shih tzu-liao* (Materials on the History of Agriculture in Modern China), I (Peking, 1957), 502–8. Henceforth *CCNST*.

[5] *Op. cit. CCSYST*, II, 220–65; *op. cit. CCNST*, I, 509–22. Old place-names were changed to present-day names as given in *Chung-kuo ku-chin ti-ming ta tzu-tien* (Encyclopaedia of Ancient and Present Day Place Names) (Taipei, 1950).

△ Chou and Hsien handicraft yarn production partially or completely collapsed

◭ Chou and Hsien handicraft cotton cloth partially or completely collapsed (70–90 per cent disappears)

▲ Chou and Hsien handicraft yarn and cloth partially or completely collapsed (70–90 per cent disappears)

○ City handicraft yarn production partially or completely collapsed

◐ City handicraft cotton cloth partially or completely collapsed (70–90 per cent disappears)

● City handicraft yarn and cloth partially or completely collapsed (70–90 per cent disappears)

□ Province handicraft yarn production partially or completely collapsed

◪ Province handicraft cotton cloth partially or completely collapsed (70–90 per cent disappears)

■ Province handicraft yarn and cloth partially or completely collapsed (70–90 per cent disappears)

▲ Handicraft cloth production emerges, Chou and Hsien
▲ Handicraft yarn and cloth production emerges, Chou and Hsien
◐ Handicraft cloth production emerges, city
● Handicraft yarn and cloth production emerges, city
◪ Handicraft cloth production emerges, province
■ Handicraft yarn and cloth production emerges, province

of Hopei, Shantung, Honan, Kwangsi, Kwangtung, Yunnan, Hunan, Fukien, Chekiang, and Kiangsu. Traditional yarn and cloth production in the household received a hard blow and declined in Szechwan, Kwangsi, Kwangtung, Kiangsi, Anhwei, Chekiang, and parts of Kiangsu. It was difficult for labour to switch to other activities or emigrate, yet the re-allocation took place. These were decades of rapid commercialization of agriculture and expanding exports. Agriculture recovered quickly after the Taiping rebellion, and cultivated land increased from 134 million acres in 1867 to 153·7 million acres in 1887.[1] National exports, a large share consisting of agricultural products, increased at the annual average rate of 2·4 per cent.[2]

Cloth production on the new basis appeared in Hopei, Yunnan, Chekiang, and in specific areas in Szechwan, Hopei, Shantung, Kiangsu, Anhwei, Kiangsi, Fukien, Kwangtung, Kwangsi, and Kweichow. Hsing-ning hsien of Kwantung exported cloth to Singapore, Kwangsi, and even Shanghai.[3] Foochow produced cloth for the lower Yangtze delta area, whereas before 1870 she imported cloth from there.[4] Ting Hsien and Kao-yang Hsien of Hopei began to export cloth to the north-west.[5] Szechwan, Yunnan, and Kweichow also exported cloth to other provinces, and land once used for cotton was turned to cultivating tobacco, indigo, and sugar; a new export trade developed quickly for these cash crops.[6] China, with its cheap and abundant labour organized by merchant capital, now possessed a weaving industry of enormous size. We will never know how much labour and capital was bound up in this activity, but the handicraft industry stretched across China and in many districts it was the chief economic activity. The export of native cloth began to increase. Between 1870 and 1900 the average annual rate of growth was 9·8 per cent, but between 1895 and 1925 it dropped greatly to 1·43 per cent. Yet even in 1921 native cloth still accounted for over half of the value of cotton textile exports.[7]

IV

Historically, industrial textile development first centres in spinning with a time-lag before cotton cloth is manufactured. Meanwhile, the spinning segment

[1] Ho Ping-ti, *Studies on the Population of China, 1368–1953* (Cambridge, 1959), p. 102. I am indebted to Dr E. S. Crawcour for suggesting the importance of rising agricultural income when handicraft is undergoing drastic change.

[2] Hou Chi-ming, 'External Trade, Foreign Investment, and Domestic Development: The Chinese Experience, 1840–1937', *Economic Development and Cultural Change* (Oct. 1961), p. 23.

[3] *Op. cit.* Koyama Masaki, p. 37.

[4] *Ibid.* pp. 47–8.

[5] For the development of cloth weaving in Kao-yang see Wu Chih, *Liang-ts'un chih-pu kung-yeh ti i-ko yen-chiu* (A Study of a Village Weaving Industry).

[6] *Op. cit.* Koyama Masaki, p. 66.

[7] The importance of foreign yarn in the increase of native cloth exports may be seen by correlating yarn imports with native cloth exports. The simple regression derived was (1) $\log Y = -\cdot6965 - -\cdot4743(\log X)$, where Y was the dependent variable, cloth exports, and X was the independent variable, yarn imports. The coefficient of determination (R^2) derived was ·72, indicating that about three-fourths of the variation in cloth exports between 1870 and 1905 was accounted for by foreign yarn imports.

in handicraft disappears as machine-made yarn is substituted for handicraft-spun yarn. Once cloth manufacturing develops it gradually displaced hand weaving, although a considerable time-lag elapsed before handicraft weaving completely disappears. Usually, many former handicraft producers merge to form production units using better technology and more capital to produce special cotton piece goods which larger firms find more expensive to manufacture. For spinning mills to develop mechanized weaving or new firms to enter and manufacture cloth, a large segment of handicraft weaving which formerly dominated the home market must be displaced. This holds true particularly if handicraft weaving had won a strong foothold in the market by substituting machine-made yarn for hand-spun yarn.

One way the industry can break the stranglehold local handicraft has over the domestic market is to accumulate profits either from a boom in exports or sudden expansion in yarn sales to domestic handicraft. Mechanized spinning industries can then purchase improved spinning machines that produce higher count, better quality yarn and weaving machines. Higher count yarn can be blended with lower count yarn or used separately to produce machine-made cloth whose quality and price is superior and cheaper than handicraft cloth. Unless this shift occurs it is possible that the quality and production costs of manufactured and hand-woven cloth are very similar.

On the other hand market demand for machine-made cloth may rise from either government demand (military demand) or the sudden decline of foreign cloth imports. Profits then materialize at the cloth-manufacturing stage, and firms expand production and new firms enter. Production is expanded by blending yarns of different quality and count, purchasing improved weaving machines, and specializing in piece goods which have a broad market. If profits fail to increase at either the spinning or early cloth-manufacturing stage, the prevalence of an efficient and well-entrenched handicraft weaving industry prevents increased demand for manufactured cloth. It is impossible to expand plant capacity at both the spinning and weaving levels, and the industry grows slowly. An expanding textile industry producing both yarn and cloth requires more goods and services from other industries. If textile development is sluggish, other industries will not necessarily be encouraged to develop.

This process is evident in both the Japanese and Chinese textile industrial growth experience.[1] Between 1860 and 1912 Japan's cotton textile handicraft industry shifted from spinning to specializing in weaving only. The first branch of the industry to develop was mechanized spinning. Expansion was slow

[1] India seems to have experienced the same kind of evolution in her textile industry. Machine-made yarn was first substituted for hand-spun yarn, thus stimulating expansion of the hand-weaving industry. A study of this industry in 1903 stated, 'it (spinning wheel) is very nearly extinguished; and yet there are countless numbers of wooden hand looms still at work in nearly all parts of the country, resisting alike the competition of the coarse productions of the native mills and of the finer goods imported from England'. Elijah Helm, 'Survey of the Cotton Industry' *Quarterly Journal of Economics* (May 1903), p. 431. Cotton spinning then developed largely on the export of yarn to China. According to Mr Helm, 'the Indian cotton-spinning industry owes its remarkable progress quite as much, to say the least, and probably more, to the great opening for its product in China than to the enlargement of the market in India'. He concludes 'The main hope of India and China in this field (cloth manufacture) lies in the gradual disappearance of handicraft manufactures. . . .'.

between 1882 and 1888 because of nation-wide depression, but in 1890 the export duty on cotton yarn was abolished, better quality cotton was imported, and mills which were founded as early as 1882 now increased yarn exports to Korea and north China. More yarn output was supplied to domestic hand weaving and profits were used to purchase new spinning machines capable of spinning cheaper and higher count yarn.[1] It was difficult at first for mechanized weaving to develop, for power looms 'found it very hard to compete with the existing hand weaving industry'.[2] 'The large-scale cotton textile industry operating with power looms, therefore, gave up competition with the hand-weaving industry and supplied the military demand or tried to expand the market abroad for its products.' [3] The profits derived from yarn exports in the 1890's and government cloth purchases during 1895 for the Sino-Japanese War enabled firms to invest [4] in more power looms, thus increasing the number from 400 to 3,289 between 1890 and 1901. Between 1900 and 1911 many enterprises merged, and the number of firms dwindled from 79 to 34. Large-scale production with improved economies of scale permitted yarn output between 1900 and 1911 to rise by 5·4 times. Between 1903 and 1912 the number of power looms increased from 24,836 to 111,686. The export of cloth over the same period rose six-fold in value terms.[5] Hand weaving began to decline and the shift from mechanized spinning to weaving was completed.

In 1879 the Viceroy of Chile province (Hopei), Li Hung-chang, proposed a spinning mill be constructed in Shanghai for the purpose of displacing foreign yarn imports.[6] After innumerable delays the mill was finally constructed and began operation in 1890 with the joint backing of government and private capital. By 1912 there were 31 firms possessing 505,388 spindles and 2,316 looms.[7] The spindle to loom ratio rose steadily because yarn was primarily produced to supply hand weaving.[8] Foreign cotton textile imports still accounted for 32·5 per cent of total imports,[9] and yarn and cloth exports amounted to

[1] Shibusawa Keizō (ed.), *Japanese Society in the Meiji Era* (Tokyo, 1958). p. 269. By 1903, 10 per cent of total yarn production was over 20 count.

[2] *Ibid.* p. 253.

[3] *Ibid.* p. 253.

[4] *Ibid.* pp. 274–5. Kajinishi Mitsuhaya writes: 'It must be noted, however, that all this development of the modern textile industry (cloth production) was attained through the military demand. In 1890 the Osaka Spinning and Textile Co. planned to produce a cotton cloth called *kokura ori* for military uniforms. During the Sino-Japanese War, the company engaged exclusively in the production of cloth to meet the demand of the War Office. The Konagigawa Textile Co. also got orders from the Army and the Navy Offices. This military demand relieved the company of its great problem, for it could then dispose of its stock pile, resulting from the suspension of exports to China during the Boxer Uprising in 1900.'

[5] Ohara Keishi (ed.) *Japanese Trade and Industry in the Meiji-Taisho Era* (Tokyo, 1957) p. 313. Between 1908 and 1917 cotton cloth export expanded at the rate of 19·3 per cent per annum.

[6] Wang Ching-yu (ed.), *Chung kuo chin tai kung-yeh shih tzu-liao* (Materials on the Industrial History of Modern China), ser. 1, II (Peking, 1957), 1038–9.

[7] Yamasaki Chōkichi, *Shina no Bōseki to Orimono* (Spinning and Weaving in China) (Tokyo, 1927), pp. 15–16. Spindle and loom data from *CMCS*, p. 355.

[8] In 1913 yarn imports were 358 million pounds while domestic production was between 200 and 250 million pounds. Power looms only used about 15 million pounds, the remainder going to hand weaving. See Hatano Yoshihiro, p. 548.

[9] Cheng Yu-kwei, *Foreign Trade and Industrial Development of China* (Washington, 1956), p. 19.

only 1·6 per cent of the total with handicraft cloth making up 75 per cent of these exports.[1]

China's late start meant a failure to develop an export market. India and Japan gradually dominated the Asian yarn market, and there were few areas in south-east Asia which could use the low-count Chinese yarn. The industry's development was a function of domestic hand-weaving demand and the volume of textile imports. The increase in yarn output was fairly slow between 1899–1903 and 1909–1913 as output rose from 178,679 piculs to only 338,924 piculs, an increase of 89 per cent in ten years.[2] Japan's industry in the 1890's expanded yarn production more than four-fold, an increase stimulated chiefly through exports and domestic demand. Government demand for cloth was weak. Cloth manufacturing had to compete not only with cloth imports but an efficient nation-wide hand-weaving industry.

World War I greatly changed conditions in the industry. Foreign yarn imports suddenly declined after 1913 and the domestic yarn price rose. Between 1914 and 1919 the price of 10 count yarn in Tientsin rose 130 per cent compared to a mere 20 per cent rise in wholesale prices.[3] New firms entered the industry, older and more efficient firms merged, and by 1922 there were 86 companies controlling 130 mills.[4] More significant was the great increase in yarn production. Between 1913 and 1918 yarn production rose from 1·2 to 2·4 million piculs, a 100 per cent increase, whereas between 1907 and 1913 production rose only 33 per cent (from ·9 to 1·2 million piculs).[5] The large profits acquired from the rise in yarn prices and increased yarn production were used to buy new spinning machines and weaving looms. A 1933 survey of spinning factories in seven provinces revealed that the largest percentage of capital stock had been purchased between 1919–1923.[6] This investment enabled the industry to produce slightly higher count yarn and manufacture more cloth.

The sudden decline in foreign cloth imports, expansion of trade, and gradual improvement in the economy caused an increase in demand for cloth. Chinese enterprises had begun to produce three kinds of cloth piece goods before the war: sheetings, drills, and an all-purpose cloth called *ai-kuo-pu*.[7] The latter began to replace cloth imports during the Great War period and after and compete with handicraft cloth. Many small and medium-sized enterprises sprang up in northern Kiangsi and Kiangsu to specialize in this type of cloth. Capital investment usually ranged from 3,000 to 30,000 yuan, 10 to 30 weaving

[1] Fang Hsien-t'ing, *Chung-kuo chih mien-fang chih-yeh* (China's Cotton Textile Industry) (Shanghai, 1934), p. 327.

[2] *Op. cit.* Wang Ching-yu, ser. 2, II, pp. 1158–9.

[3] *Op. cit.* Fang Hsien-t'ing, p. 126. Yarn price for 20 count yarn rose even higher. The rise in yarn price occurred throughout the country.

[4] *Op. cit.* Yamasaki, p. 17.

[5] Arno S. Pearse, *The Cotton Industry of Japan and China: Being the Report of the Journey to Japan and China* (Manchester, 1929), p. 154.

[6] Wang Yu-chien and Wang Chen-chung, *Ch'i-sheng Hua-shang sha-ch'ang tiao-ch'a pao-kao* (A Report on an Investigation of Chinese Spinning Mills in Seven Provinces) (Shanghai, 1935), pp. 69–70.

[7] *Op. cit.* Yamasaki, pp. 115–17.

machines were used, and the labour force numbered from 20 to 600 people.[1] This cloth was produced by mixing low-count Chinese yarn (20 count) as the woof with high-count Japanese yarn (42 count) as the warp. By 1922 this cloth was superior in quality and cheaper in price than handicraft cloth; although defective because of weaker threads, it gradually began to replace native cloth in the market.

Although production of cloth increased nearly three-fold between 1915 and 1925,[2] only the first beginnings of a shift from spinning to mechanized weaving was achieved. In 1922 handicraft weaving still accounted for 53 per cent of the total cloth supply, foreign imports and domestic manufacturer accounting for 36 and 11 per cent of the remaining cloth supply.[3] 'Even though yarn imports declined gradually each year and domestic yarn output increased, the greatest share of total yarn supply (calculated at over 5 million piculs) still went to handicraft weaving.' [4]

After 1925 a decisive shift in the industry occurs. New capacity has been installed and operating. Blending of different count yarns produced standardized cloth which made great inroads into the domestic market. In a poor country both income and price elasticity of demand for cotton cloth is usually high. If manufactured cloth has the edge in quality and price over handicraft cloth, it can reap greater profits by expanding cloth production. Data is sparse, but there is every indication this is what began to take place after 1925 [5] (Table 1).

The spindle-loom ratio begins to fall for the first time. More capacity to produce cloth than yarn is being added. Yarn output increases only 27 per cent between 1925 and 1933, but cloth output rises more than seven-fold. There is a substantial increase in new spinning machines (five-fold) capable of producing higher count yarn. At the same time the Nationalist government secured tariff autonomy for China in 1928. The combination of these two factors reduced imports, and by 1936 home production nearly displaced cloth imports.

While it took the Japanese cotton textile industry three decades to develop cloth manufacturing (1882–1912), China's industry did not begin to shift from spinning to weaving until after forty-six years (1890-1936).[6] The Meiji government began very early to promote large-scale textile manufacturing in the 1870's while the Ch'ing government only debated the merits of such policy. The Japanese government arranged textile conferences, advanced loans to

[1] Tōa Dōbun Kai, *Shina Shobetsu Zenshi* (A Comprehensive Gazeteer of the Various Provinces of China) (Tokyo, 1920), II (Kiangsi), 643 and XV (Kiangsu), 667–8.

[2] G. E. Hubbard comments that 'production (of cloth) meanwhile became substantial after 1915 when the estimated output of factories in China was 45 million yards (say, very approximately, 1·5 million pieces), increasing to 120 million yards in 1925 and 590 million yards in 1929' (G. E. Hubbard, *Eastern Industrialization and its Effect on the West* (London, 1935) p. 190).

[3] *Op. cit.* Yamasaki, p. 78. These are Yamasaki's estimates.

[4] *Ibid.* p. 190.

[5] See note 2 above to contrast the nearly six-fold increase in cloth between 1925 and 1929 with only a three-fold increase between 1915 and 1925.

[6] A Japanese study of labour productivity in the Chinese and Japanese spinning industry in 1944 concluded that China's spinning industry in 1929 was roughly equivalent to Japan's in 1913–1914. Idle capacity and longer working hours were a more typical feature of China's industry than Japan's. See Moriya Noriro, 'Shina Bōsekigyō no Rōdō Nōritsu' (Labour Efficiency in the Chinese Spinning Industry), *Tōa Kenkyū Shōhō*, XXIX (August 1944), 1–100.

Table 1. *Relevant Data on Transformation of Cotton Textile Industry (1925–1936)*

Year	Low-count yarn Producing spindles	High-count yarn Producing spindles	Total no. of spindles (*a*)	No. of power looms (*b*)	Ratio of spindles to looms	Output of yarn (bales) (*c*)	Cloth piece goods (pieces)	Ratio of yarn imports to exports (piculs) (*d*)	Ratio of cloth imports to exports (value)
1925	3,339,728	100,016	3,439,744	20,674	167	1,791,684	3,000,575	8·1	13·1
1926	?	?	?	?	?	?	?	?	?
1927	3,515,882	143,102	3,658,984	24,082	151	2,127,383	8,999,370	?	?
1928	3,609,680	185,896	3,795,576	25,818	146	2,175,366	13,767,788	·8	10·4
1929	3,761,632	254,404	4,016,036	28,572	145	2,297,625	14,779,538	?	?
1930	4,102,078	303,924	4,406,002	31,752	141	2,400,734	16,179,844	?	?
1931	4,339,706	345,574	4,571,942	36,303	126	2,283,898	20,233,710	·07	8·9
1932	4,599,357	408,560	4,872,057	39,564	121	2,332,684	20,121,900	?	?
1933	4,731,146	440,454	4,731,146	42,854	111	2,272,834	23,465,437	?	?
1936	5,102,796	532,270	5,635,066	58,439	96	2,039,216	?	·07	1·1

(*a*) *Op. cit. CMCS*, p. 355.
(*b*) *Ibid.* p. 355.
(*c*) Yen Chung-p'ing (ed.), *Chung-kuo chin-tai ching-chi shih t'ung-chi tzu-liao suan-chi* (Collected Statistical Materials on the Economic History of Modern China) (Peking, 1955), p. 130, output of cloth also from Table 20.
(*d*) *Op. cit.* Yu-Kwei Cheng, p. 33, calculated from data in Table 2.

purchase foreign machines, and sent students abroad for technical training. The first mills were in operation in 1882 whereas China only started her industry a decade later. Both countries had to compete with a handicraft weaving industry and foreign yarn and cloth imports. But an early lead gave Japan an expanding export trade which was decisive in gradually displacing home handicraft and foreign imports.

Better enterprise management, more effective government assistance, and a vastly improved credit and marketing system would have speeded up China's textile development in terms of shifting from spinning to weaving, displacing foreign imports and domestic handicraft, and developing an export trade. But were these factors alone entirely responsible for the delay, and of not, how much importance can we attribute to them? The total textile industry (hand weaving, mechanized spinning and weaving) had to be transformed for manufacturing to develop. The mechanism to achieve this was for profits to grow to permit investment and technical change. Profits are a function of both market size and entrepreneurial ingenuity to reduce cost. It is questionable, given the size and importance of the hand-weaving industry, that entrepreneurship alone would have made the major difference. A comparison of foreign and Chinese mill equipment for the period indicates that it is only during and after World War I that the shift to cloth manufacturing occurs. Between 1896 and 1913 Chinese spindles increased 163 per cent compared to 81 per cent for foreign mills.[1] Between 1914 and 1930 power looms in all textile enterprises increased more than three-fold and spindles increased more than four-fold.[2] Japanese firms showed the greatest increase (spindles and power looms increased six-fold and

[1] *Op. cit.* Pearse, p. 154.
[2] *Op. cit.* Fang Hsien-t'ing, Chart 2.

three-fold respectively), followed by Chinese firms (spindles and looms increased more than three-fold), and last English firms whose capacity did not quite double. Chinese mills seemed to have performed as well as their foreign counterparts in developing cloth manufacturing despite lower labour productivity and poorer management.[1]

The sudden accleration of industrial growth after 1914 lends weight to the argument that the size of market was perhaps the crucial factor limiting textile development. It is exceedingly difficult to argue when, how, and where the proper amalgam of private and government entrepreneurship could break a structural rigidity, open markets for production expansion, and initiate cumulative growth. Japan's experience suggests this was effectively done in the 1870's and 1880's. China's failure to launch gradual change of her legal, economic, and political institutions permitted a newly formed industry, hand weaving, to block the expansion of cotton cloth manufacture.

V

It is not surprising to note that when cloth production reveals the greatest increase (1925–1933) many handicraft weaving centres throughout China commence to decline. In Tientsin weavers found their costs steadily rising whereas manufactured cloth prices fell as much as two-thirds in 1928.[2] In Foochow of Fukien province weaving had expanded rapidly immediately after World War I, but in 1924 declined when machine-made cloth from Shanghai entered the market.[3] The same reason accounts for handicraft weaving decline in Wu-han city and districts in Shensi province.[4] Weaving prospered in Yulin of Kwangsi province between 1929 and 1931 but by 1934 had disappeared.[5] Lan-hsi and Yu-yo districts in Chekiang province were hard hit when machine-made cloth entered the area.[6] In the early 1930's more manufactured cloth circulated in the market centres of Ch'ing-p'u, Wu-hsi, T'ai-tsang, Ch'ang-shu, and Pao-shan of Kiangsu causing decline in the weaving industry.[7] Development of rayon yarn spinning and import of rayon yarn enabled cloth manufacturing in Shantung to expand sales to Hopei, thus gradually undermining the hand-weaving industry of Kao-yang Hsien.[8] Disruption in a number of markets also brought decline in weaving. Ting Hsien's exports to the north-west from Hopei province declined after World War I because of marketing difficulties.[9] Nan-t'ung district in the northern Yangtze delta area lost its market

[1] It has been frequently asserted that 'Foreign enterprises in China were so effective in their competitive power or enjoyed so many advantages secured on their behalf by their respective governments that the Chinese-owned modern enterprises were hopelessly oppressed and had little chance, if any, to grow'. This proposition has been challenged by Hou Chi-ming. See Hou Chi-ming, 'The Oppression Argument on Foreign Investment in China, 1895–1937', *Journal of Asian Studies* (Aug. 1961), p. 435.

[2] *Op. cit. CKKSS*, III, p. 21.

[3] *Ibid.* p. 26.

[4] *Ibid.* pp. 27–8.

[5] *Op. cit. CCNST*, III, p. 645.

[6] *Ibid.* p. 646.

[7] *Ibid.* pp. 646–7.

[8] *Op. cit.* Wu Chih, p. 264.

[9] Sidney D. Gamble, *Ting Hsien: A North China Rural Community* (New York, 1954), p. 307.

when Manchuria fell to the Japanese. The same reason accounts for the decline of weaving in Nan-ch'ang district in Kiangsi and districts in Hunan, Hopei, and Szechwan.[1]

Even though handicraft weaving started to decline after 1925, it was far from demolished completely. In 1936 it was estimated that about three-fourths of the demand for machine-produced yarn still went to handicraft weaving.[2] Another writer, commenting on the striking imbalance between spindle and power loom capacity in 1936, stated that 'The total yarn output of 5·1 million spindles provided sufficient cloth for 188,000 weaving looms. Actually, the total number of looms in both spinning and weaving mills throughout China totalled around 80,000.' [3]

The gradual displacement of handicraft cloth by manufactured cloth meant forcing handicraft to produce on a new basis, integrating where possible with power looms and specializing in cloth for specific use rather than the all purpose *t'u-pu* of former times.

Even though the cotton textile industry was China's leading industry in the 1930's,[4] it had achieved this position at a time when conditions were least propitious to influence favourably other manufacturing and service industry development. All signs pointed to general agricultural stagnation between 1927 and 1936.[5] The loss of Manchuria in 1931 was a blow at inter-regional trade. Between 1929 and 1936 the value of net exports fell steadily from an all-time high of 1·0 billion taels to 452·9 millions taels.[6] When silver prices rose in the United States between 1933 and 1935 silver moved out of the country and 'accelerated' a deflationary spiral in the Chinese economy.[7] Other handicraft industries besides cotton cloth weaving were in decline.[8] The decline in silk

[1] *Op. cit. CCNST*, III, pp. 648–9.

[2] *Op. cit.* H. D. Fong, p. 275.

[3] *Op. cit. CKMF*, p. 251. An American expert visiting China in 1929–1930 predicted the textile industry was on the threshold of rapidly taking over the domestic market and expanding exports. However, he was careful to point out that 'the cotton industry of China still mainly consists of the spinning industry. In addition to its production of cloth for the domestic market, it must chiefly depend for its prosperity upon its sale of yarn to the literally millions of hand looms which remain the mainstay, as they have been for ages, of China's cotton textile industry. In other words, while the number of China's modern cotton mills has greatly increased since the world war, they are really but a drop in the bucket compared with the cotton industry which still remains in the household of China's farmers and artisans.' See Charles K. Moser, *The Cotton Textile of Far Eastern Countries* (Boston, 1930), p. 65.

[4] In 1930 about 47 per cent of total factories in nine major provinces were textile enterprises, of which more than half were cotton textile mills. See *op. cit.* H. D. Fong, p. 113. In 1933 textiles led all other industry groups in value of output produced. See *op. cit.* Yu-Kwei Cheng, p. 30.

[5] This assertion is based on an index I have made for agricultural production between 1927 and 1936 consisting of nine products. This index shows no output increase for this period. Output was taken from *CCNST*, III, 924, and price data was taken from T. C. Liu and K. C. Yeh, *The Economy of the Chinese Mainland: National Income and Economic Development, 1933–1959* (Santa Monica, 1963), II, 483.

[6] *Op. cit.* Yu-Kwei Cheng, p. 25.

[7] *Ibid.* p. 67. Yet a depreciated silver exchange did 'help ward off the depressive consequences of worldwide economic havoc', as Cheng asserts later, but tariffs could have helped to do this. Meanwhile, credit restrictions crippled agriculture and industry.

[8] Many Chinese economists and some distinguished foreign visitors such as R. H. Tawney, J. B. Tayler, and Arthur Salter were alarmed at the decline of Chinese handicraft during the 1930's. They were unanimous in stressing the development of small, rural enterprises, chiefly on a co-operative basis, as opposed to large-scale industry. See H. D. Fong, 'Industrialization and the Rural Industries in China', *China Quarterly* (Spring, 1937), pp. 259–79.

exports and mechanization in the silk industry reduced demand for native reeled silk.[1] The early 1930's was the worst possible period to begin national economic development programmes, yet this was precisely the time when the Nationalist government sought to establish new industrial foundations. The role cotton textile manufacturing could play under these conditions was very limited.

Both in 1912 and in 1936 respectively China's and Japan's cotton textile industry was the leading industry in terms of amount of labour employed, share of manufacturing output produced, and quantity of capital used. The industry's shift from spinning to cloth manufacturing in Japan occurred at a favourable time to influence production technology and scale of economic organization of new manufacturing activity.[2] After 1914 the industry encouraged the expansion of machine tool-making [3] and other related industries. One should not claim too much from cotton textile development to explain Japanese economic growth, but many under-developed countries today are attempting to create industries of similar magnitude and influence.[4]

Agricultural development was crucial for the first successful re-allocation of resources in handicraft from hand spinning to hand weaving in both Japan and China. But when handicraft weaving had to give way later to domestic manufactured cloth, re-allocation had to occur again. In the early 1900's it was relatively easy for labour to shift to urban employment in Japan. However, serious unemployment and a fall in rural incomes characterized China of the 1930's.

Any study of modern China's industrialization must take into account the evolution of traditional industries, their vertical and horizontal relationship with emerging manufacture in the treaty-port centres, and their subsequent decline as trade and industrial growth initiated structural transformation.[5]

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[1] The Chinese anthropologist Fei Hsiao-t'ung believed the decline in handicraft was disastrous for villages because it destroyed the last resort to earning supplementary income. See Fei Hsiao-t'ung, *Peasant Life in China* (London, 1962), cap. XII; also his *Earthbound China* (Chicago, 1945), Conclusion.

[2] William W. Lockwood, *The Economic Development of Japan* (Princeton, 1954), pp. 372–6.

[3] Before 1914 Japanese spinners purchased their capital from England. 'During the war, however, imports practically stopped and Japan had to provide for her own needs. This led to the complete collaboration between the cotton and machine industries'. Keizo Seki, *The Cotton Industry of Japan* (Tokyo, 1956), p. 23.

[4] The need for developing import competing industries in Asia was recently stressed by ECAFE by the example of the Japanese cotton textile industry in the late nineteenth century. See United Nations, *Economic Survey of Asia and the Far East, 1963* (Bankok, 1964), pp. 88–95.

[5] Hou Chi-ming has pointed out that traditional handicraft in China did not decline after 1840 but co-existed with modern industry. See his 'Economic Dualism: the Case of China, 1840–1937', *Journal of Economic History* (Sept. 1963), pp. 277–98.