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PROTOINDUSTRIALISATION IN THE DOMAIN OF CHŌSHŪ IN THE EIGHTEENTH AND NINETEENTH CENTURIES*

Shunsaku NISHIKAWA

Chōshū is known as one of the powerful domains rising against the Tokugawa Shogunate during the Meiji Restoration period. Her strength was undoubtedly originated from her well-advanced economy, which, by the beginning of the nineteenth century, had no longer been a pure agrarian one. About 30 percent of the total commodity output in the early 1840s were produced by rural industries such as paper manufacturing, cotton weaving, salt extraction, and *sake* [rice wine] brewery. The first two of them are typical protoindustries defined by F. Mendels and others, and the third is obviously not a manufacturing industry, but is the one characterised by its use of peasant labor and external marketing.

To begin with, in Section I, the growth of population, of output, and hence, of per capita output in the period from the mid-eighteenth century to the mid-nineteenth will be reviewed. It will be observed on the sample of selected *saiban* [counties] that the correlations between the rate of population growth and the share of non-agricultural income or the level of per capita disposable income in the first half of the nineteenth century were rather loose. Particularly counties with protoindustry such as Yamashiro (paper), Ōshima (weaving), and Mitajiri (weaving and others) deviated from the positive regression line to a substantial extent.

In order to find the reasons of these deviations, the development, geographic distribution, workforce composition and other features of protoindustries are examined in Section II. Attention will be given to the effects of the *han* [domain] government policies, which of course varied from one industry to another. For instance Yamashiro's deviation, as we shall see, is explained by the pressing effect of *han* monopsony of paper. Intra-regional or inter-*saiban* mobility of labor will be unable to be ignored. Without such migration opportunities the most rapid growth of population in Ōshima—more than 1 percent per annum!—could never have been sustained.

A majority of out-migrants from Ōshima went to Mitajiri. This probably goes somehow toward explaining why the rate of population increase in the receiving area was lower than average. On the other hand it will be argued in Section III that such high income should be spent in paying a high cost of living in town life and also in investing much for animal capital. The structure and functioning of the

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local labor market in the county will be considered too. Lastly Section IV is concerned with the observation that despite her excellent preceding economic performance Chōshū-Yamaguchi economy seems to have been retarded throughout the second half of the nineteenth century. It will be suggested that the opening of the nation and the Meiji Restoration that followed gave, ironically, unfavorable influences on the start and the progress of modern industrialisation in the region.

I

Chōshū was located at the south-west end of Honshū Island. The fief covered the Provinces of both Nagato and Suwō (now Yamaguchi Prefecture), whose area is approximately 6,100 square kilometers. Population of commoners in the area grew from 475,000 in 1721 to 696,000 in 1846, as a result of which the population density increased from 78 to 114 per square kilometer, the average rate of growth being 3 percent per decade. It was the highest among all provinces in Japan, while the rate for the nation as a whole was merely 0.25 percent per decade.

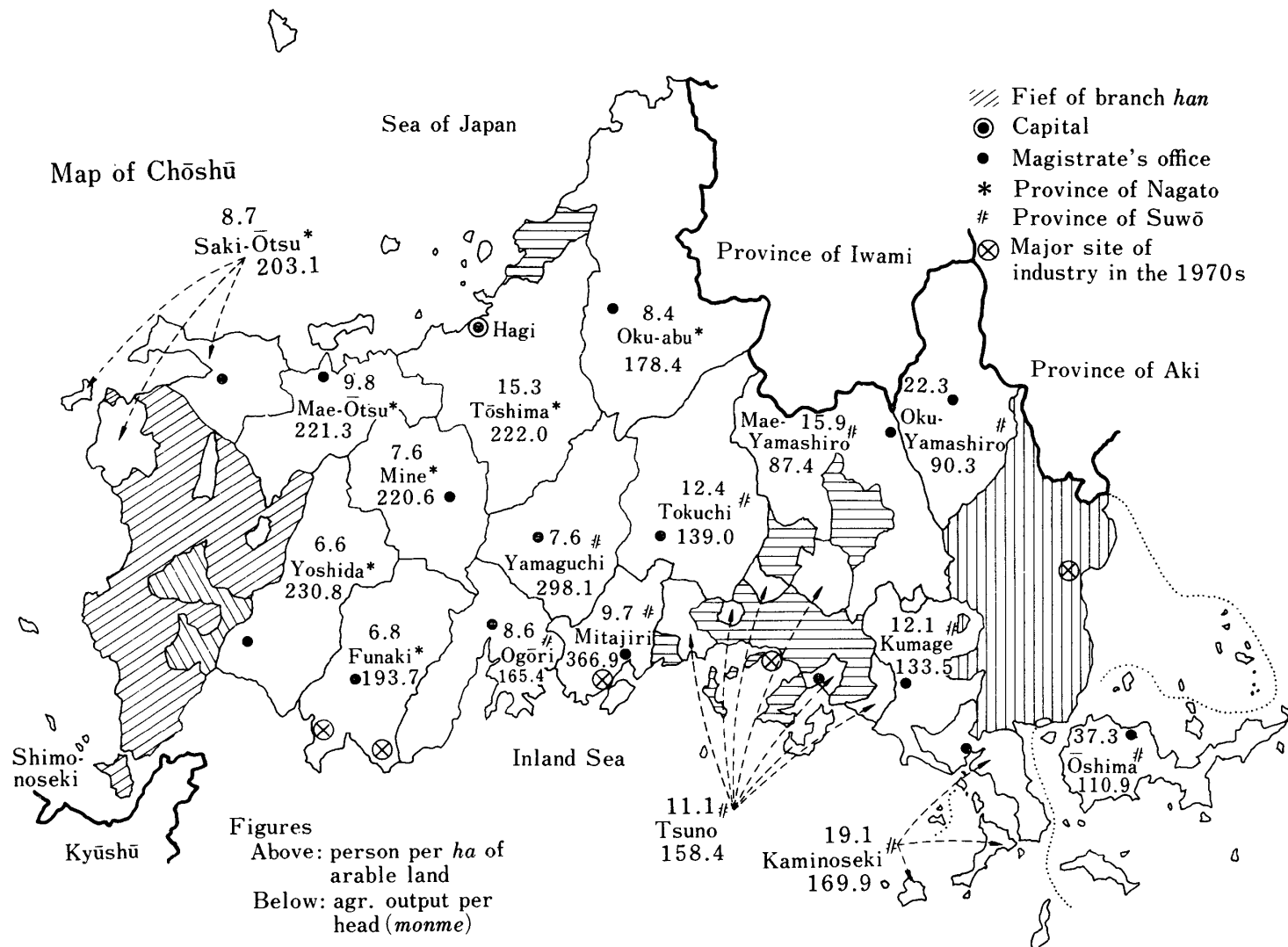
As to output growth, somewhat reliable estimates are available only for the Domain of Chōshū, or Chōshū *han*, whose fief was about three-fourths of the area—the remainder was ceded to four branch domains (see the shaded areas in Map). The rice-equivalent output that was assigned by the *han* government as tax-basis was 710,000 *koku*¹ in the mid-eighteenth century, which was said to have increased up to one million *koku* before the 1868 Restoration. The decadal rate of growth computed from them is nearly the same as the one of population increase. Nevertheless our estimate² of commodity output in the early 1840s is one and a quarter million *koku* in terms of rice, accordingly if this figure is used instead, the rate of growth of output becomes nearly 7 percent and commodity output per head of population is supposed to have increased at 4 percent per decade from the mid-eighteenth century to the early 1840s. It looks rather low if compared to the rates found elsewhere after industrialisation, but it was outstanding in the dim light of the preindustrial age.

In the study of protoindustrialisation in the eighteenth century Flanders³ it is observed that the restriction imposed on population could be unbounded by providing peasants with both the opportunities of by-employment and supplementary income, and the food stuffs by commercialised agriculture elsewhere

¹ One *koku* is 180.4 litre, and this volume of rice usually weighs 150 kilograms. The tax-basis output assigned by the *han* government was never an accurate assessment of industrial output. The inaccuracy is supposed to have been increased as protoindustrialisation went on.

² S. Nishikawa and H. Akimoto, "Bōchō Ichi-en Keizai-hyō," Shakai Keizai Shi Gakkai, ed., *Atarashi-i Edo Jidaishizō o Motomete*, Tōyō Keizai Shimpōsha, 1977 ["A Tableau Économique of the 1840s Chōshū in the Input-Output Framework," Socioeconomic History Association, ed., *Toward a New Understanding of the Age of Edo*; all translations are mine].

³ Franklin F. Mendels, in W. N. Parker and E. L. Jones, eds., *European Peasants and their Markets*, Princeton University Press, 1975.



within the region. In order to look at whether such a phenomenon was prevailing in Chōshū, Figure 1 is drawn with the rate of population growth from the mid-eighteenth century to the early 1840s on the vertical axis, and the share of non-agricultural income (including income from service activities) in total income at a later point of time on the horizontal axis.

The rate of population growth is obtained from two politico-geographic surveys of villages in the fief, compiled by village headmen by the order of the *han* government, in the mid-eighteenth century and in the early 1840s respectively. The later one, now called *Bōchō Fūdo Chūshin-an* (*BFC* hereafter), is an extraordinarily rich bonanza to learn various facets of the contemporary Chōshū economy and

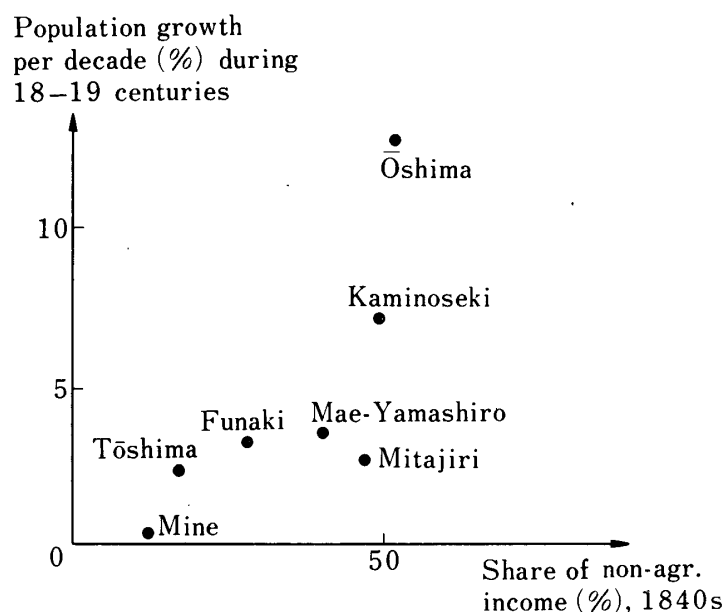


Figure 1.

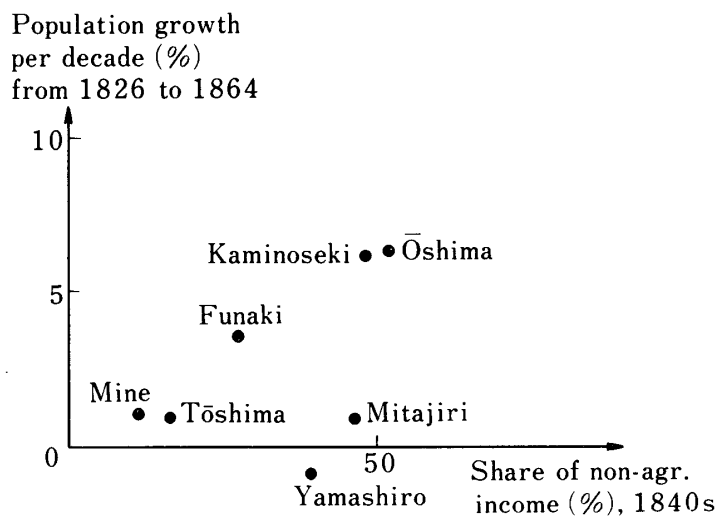


Figure 2.

society. The above share which is no more than a proxy of the relative weight of industrial activities of each *saiban* is itself able to be estimated from the data in the *BFC*, which is exhibited in Figure 1.⁴

One may say that there is a rising curve among the observations. Nevertheless since the population growth is a “past” growth while the share of non-agricultural income is lagged by nearly hundred years, the causal chain runs from the former to the latter, and not *vice versa*. So, the curve, if were admitted, could suggest only: the faster the “past” population increase, the higher the share of non-agricultural income. Thus a real question is not whether the curve is able to be identified but why three or four observations for Ōshima, Kaminoseki, Mitajiri, and/or Yamashiro are arrayed at different height despite their almost identical shares.

In Figure 2 the rate of population growth is replaced by the decadal average rate during the period from 1826 to 1864, in which the 1840s is included. Again and more clearly a regression line with positive slope may be found among the five observations from Mine to Ōshima. However Mitajiri and Yamashiro⁵ deviate to a substantial extent below that regression line, so the correlation would not become tight unless these two observations were excluded. In Figure 3 the share of non-agricultural income, in turn, is replaced by the level of disposable income per capita per year in the 1840s. Most conspicuous changes have taken place as for Mitajiri and Yamashiro. The former shifts the position to the right, whereas the

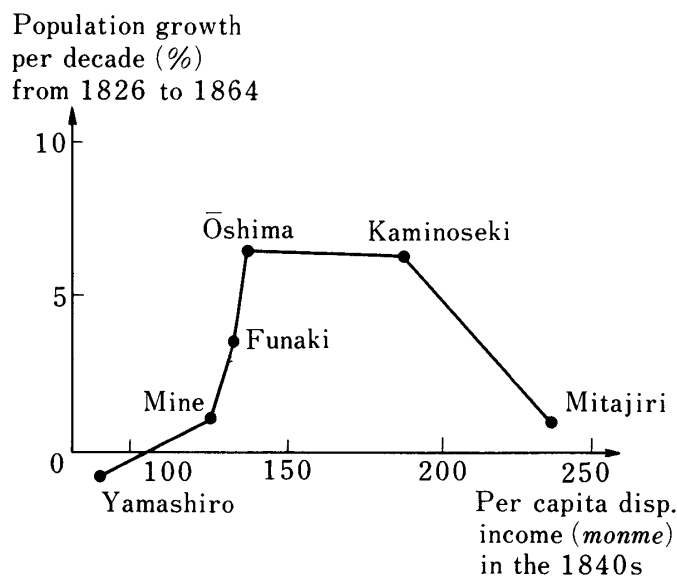


Figure 3.

⁴ Data given in the *BFC* of most of the other *saiban* mentioned above however are neither sufficient nor accurate enough to obtain any more reliable estimates of the share and disposable income, though efforts will be made to squeeze information from a few usable ones.

⁵ The rate from 1826 to 1864 is obtained from population register, called *tojaku*, that is supposed to have been a prototype of that the Meiji government compiled later. In *tojaku-chō* [statistics of population register] two *saiban* of Yamashiro used to be consolidated.

latter to the left very drastically. Though the directions of the shifts are opposite with each other, they seem to suggest that *han* government policies for industries and even for agriculture, by means of taxation, subsidising and others means, had quite profound effects on protoindustrialisation. For instance as we shall see, *han* monopsony of paper produced in Yamashiro, combined with taxation on agriculture, “exploited” the peasant earning, and thereby pressed the standard of living in the region, whereas the salt producers in Mitajiri were assigned only nominal taxes and laborers were not levied any tax.

In the next section three major industries will be studied more closely. Their development, geographic distribution, workforce composition, methods of production, *han* government policies, wages and incomes, and so forth will be examined in order to explain the deviations and shifts observed so far. Before moving on, however, it is useful lesson to know something about taxation in the region.

A *daimyo* [lord] usually levied taxes of more than 40 percent of the rice-equivalent output, which was assigned by *han* government based on the assessed productivity of land. In the case of Chōshū *han* in the early 1840s such a tax-basis output was approximately, 900,000 *koku*, or 72,000 *kan*⁶ evaluated at the current price of rice, and 26,200 *kan* of taxes were collected from agriculture, fishing, and forestry. The latter amount accounts for 36.4 percent of the above tax-basis output. On the other hand, the taxes on industry, transportation, commerce, and other services were, astonishingly enough, negligible and the amount was no more than 300 *kan*. Thus the total tax revenue thus amounted to 26,500 *kan*. It is interesting to note that the proportion of tax revenue is reduced to 26.5 percent if the “real” total commodity output is taken.⁷ Also interesting to note is that output of the four major industries was roughly identical to the total tax revenue in the *han* coffer.

II

(1) Paper Manufacturing

Paper was produced mainly by peasant families living in hilly upland areas such as Oku- and Mae-Yamashiro and also Tokuchi *saiban*. The area was poorly endowed in agriculture, and in fact agricultural output per head of peasant population in the two *saiban* of Yamashiro was the lowest among 17 *saiban*.

⁶ *Kan* was originally a unit of weight, equivalent to 3.75 kilograms. Since silver currency was a money by weight, contemporaneously it was used as a unit of value. It is believed that Chōshū belonged in the silver currency area, but it is unknown how much silver currency were really circulated. Moreover, the *han* government continued to issue its *han-satsu* [domainal paper currency] after the fourth quarter of eighteenth century. The circulating volume reached at nearly 40,000 *kan* and it was priced at 80 percent or more of hard currency in the early 1840s. The price of rice was 80 *monme* per *koku* in terms of *han-satsu*—one *monme* equaled one-thousand of *kan*.

⁷ It was more than 100,000 *kan* at the current price of rice in terms of *han-satsu*. A cautious reader still notes that it exceeds the above tax-basis output by almost 40 percent (!).

Therefore the *han* government ordered them to produce paper in the slack season of cultivation and bought the output at monopsonistic price that was usually two-thirds lower than the selling price to Osaka merchants. This monopsony dated back before the mid-seventeenth century. Since this monopsonistic profit was the only other means, except sales of taxed rice, through which the *han* government could get specie, the government was inclined to levy heavier tax in rice on paper-producing villages. The price of paper was then paid back in terms of rice, so heavy taxation meant a higher assignment of paper production.

The *BFC* shows that the tax-basis output assigned to both of two *saiban* of Yamashiro was about 38,000 *koku* in terms of rice in the early 1840s, while it was 60,000 *koku* at the beginning of the eighteenth century. Obviously that tax was too heavy for the Yamashiro peasants to pay, then in 1718 a riot bursted out to protest against such a heavy burden and to demand a reform of paper monopsony system. Some fifteen years later a severe famine hit upon the fief and particularly hard hit was the Yamashiro district where substantial population was lost. A decrease in the tax-basis output observed from the eighteenth century to the nineteenth presumably reflected an adjustment by the government to restore both the population and the productivity in the district. The rate of population increase from the mid-eighteenth century to the early 1840s was, as shown in Figure 1, 3.5 percent per decade, which was not the lowest and perhaps the result of improvement of living standard in the district.

But the population turned to decrease slightly from 1826 to 1864 (see Figure 2), and indeed the annual quantity of food per head in the *BFC* was only 1 *koku* of grains, including only 35 percent of rice, which might be regarded minimum compared to the ones given in the reports for other *saiban*. These facts may suggest that the subsistence had been hardly maintained again in the mid-nineteenth century and after. Thus the paper monopsony seems to have pressed the standard of living of the inhabitants in the paper-producing area.

(2) Cotton Weaving

In contrast, the *han* government scarcely intervened into the production and marketing of cotton cloth. The *BFC* tells us that 726,000 *tan*⁸ of cloth were produced a year. Ōshima, Kaminoseki, and Ogōri outweighed the production, where more than a half of the total products were produced. Mitajiri and Funaki came next. These weaving areas are all located along the coast of the Inland Sea (see Map). Weaving was a typical “cottage” industry. Peasant families owned one or two wooden looms, with whom merchants in Yamaguchi, Mitajiri, and Kaminoseki supplied raw materials. Peasant wives and daughters wove 10 to 16 *tan* of cloth per family per year and obtained a quarter of the products as their wages. Mean household size was approximately 4, so this wage in kind meant that a member of family consumed a quarter to one *tan* of cloth every year. Roughly

⁸ One *tan* was about 10 m of cloth of 35 cm width, which was sufficient to make *kimono* [wearing cloth] for one adult.

more than 500,000 *tan* of cotton cloth, either be dyed or not, were shipped for Osaka.⁹

(3) *Salt Extraction*

Salt was extracted out of sea water anywhere in Japan along the sea coast and the climatic and geographic conditions for the production were especially favorable in the maritime areas surrounding the Inland Sea. It had been produced in Chōshū too since the seventeenth century or even earlier. The *han* government encouraged either *samurai* or merchants to reclaim the sea shore for rice production, although the scale of reclamation was limited in their undertakings. In about the mid-eighteenth century the government took the initiative in reclaiming 200 hectares of sea shore in Mitajiri *saiban*. Original intension was, it is suggested, to develop the paddy land, but having considered a high profitability from salt than rice the government decided to convert it into the salt field. The reclamation was financed by the funds accumulated in secret in the *han* coffer. Tax was at first exempted, then levied on producers at a reduced rate in order to encourage settlement and production.

The business was initially not so rewarding as expected, however technical improvement, namely the alternate two-day operation and substitution of coal for fire wood, and a cartel agreement—limiting the period of operation six warm months a year—could succeed to bring stable profit for producers not only in Mitajiri but also elsewhere by the end of the eighteenth century.¹⁰ It is estimated from the *BFC* that nearly 600,000 *koku* of salt was produced a year in Chōshū as a whole. About 55 percent of it was produced by Mitajiri producers, another quarter was yielded in Kaminoseki, and the remaining 20 percent in Ogōri, Ōshima, Tsuno, *etc.* Skilled workers, exclusively male, came from Ōshima *saiban*, consisting of Ōshima, which literally means the “big island”, and many other small ones. Agricultural resources were relatively poor in these islands, where the islanders were obliged to engage themselves in cultivation and fishing of lower productivity. In spite of this the populaion growth in the islands was the highest of all *saiban* throughout the period we are studying. Population density too was as high as 112 per square kilometer at the late 1730s and lastly rose up to 398 in the early 1840s. As shown in Map (see figures above the names of *saiban*), population per hectare of arable land at the later point of time was 37.3, which was of course an extremely high figure. The average over the fief was 10.9, that was still very high by European standards.

Grains after tax in rice was apparently in short supply of necessity con-

⁹ It was recorded in a document that 700,000 *tan* was shipped for Osaka in 1817, but it is suspected to have been a whole production rather than shipment. Even if so, it may suggest a decline in production of cotton cloth, which perhaps was caused by the growth of competitive goods from the branch domain, Iwakuni (the right-most shaded area in Map). Iwakuni cloth was, it is said, more excellent in color and design than Chōshū's.

¹⁰ Such technical improvements and cartel agreement diffused not only within the domain but also in other salt-yielding areas surrounding the Inland Sea.

sumption,¹¹ therefore presumably more than 30 percent of it were “imported” from elsewhere, not only from counties like Yoshida, Mine, and other *saiban* with rice surplus but also from outside of the domain. Income obtained by *dekasegi* [temporary out-migration] to salt fields in Mitajiri and Kaminoseki, and to whaling in the Ōtsu district as well, could disburse such import of food and maintain the standard of living in the islands. Annual *dekasegi* reported in the *BFC* was 3,400 persons that accounted for 12 percent of the male population in Ōshima *saiban*. Additional source of income was both profit and wage from sea transportation.¹² Besides, cotton weaving might supplement household. Wives and daughters of out-migrants were engaged in weaving when their bread-winner was absent from home, usually six months or more. So far as Ōshima *saiban* is concerned, rapid population growth seems to have been sustained by proto-industrialisation both inside and outside the islands, although the rate of increase gradually decreased.

III

Cotton weaving were widely spread over the Province of Suwō except the two *saiban* of Yamashiro. Agricultural output per head of the peasant population in the Province, except Yamaguchi and Mitajiri *saiban*, was significantly lower than the one in Province of Nagato, as shown by the figures underneath the name of *saiban* in Map. Though Yamashiro's productivity was minimal, paper manufacturing could have supplemented the subsistence of the inhabitants if the *han* monopsony had been eliminated. High productivity in Yamaguchi and Mitajiri come partly from the high proportion of rice production in the agricultural output, which reflected that the irrigation facilities were well developed in the counties. The taxation on rice paddy, however, was most strict and heavier than on other crops, so the grains after tax were not sufficient for consumption in the areas too. In addition, since both *saiban* had a town within the area and had some town people in the population, vegetables, seed (for oil), and other commercial crops were cultivated to satisfy their demand.

Purchased fertilizer, namely dried fish, was input more intensively in both *saiban* than elsewhere in the fief. Moreover horses seem to have been used more frequently in the cultivation. The *BFC* shows the numbers of oxen and horses in the villages and also their relative prices. A horse was twice the price of an ox. The total number in the fief was almost 60,000, 70 percent of which were oxen on the

¹¹ It was assessed by 50 percent more in Ōshima than in Yamashiro however. In the *BFC* in Ōshima sweet potato and long raddish were included into food stuffs after converted respectively to the millet-equivalent, even though the quantity was far short of the necessary amount of consumption.

A further elaboration of the demand for and supply of staple food in Ōshima and other *saiban* as well is given in my paper, “Grain Consumption: the Case of Chōshū,” read at the Tokugawa-Meiji Transition Workshop held at White Sulphur Spring, West Virginia, Aug. 1982.

¹² Capacity of ships (excluding fishing boats) of Ōshima *saiban* grew seven times larger from the late 1730s to the early 1840s.

average, while in Mitajiri the ratio of oxen was merely less than 20 percent and in Yamaguchi 47 percent.¹³ It is supposed that horses were probably utilized in transportation in the slack season, which was, by the way, an additional source of income for the peasant-horseman. At any rate Mitajiri peasants in particular invested much fund into animals and fertilizer as well. Accordingly the method of production was more "capital" intensive or less labor intensive than elsewhere in the fief.

It is likely that such a tendency for labor saving methods would be an outcome of strong demand for labor in salt extraction and other trades in the Mitajiri. As described in the last section, many skilled in-migrant workers were employed in the salt fields in Mitajiri and Kaminoseki. However the industry hired almost the same number of unskilled laborers for auxiliary jobs from the nearby areas. Skilled in-migrant workers were paid higher wages for their six-month labor, the rate of which varied from 800 to 450 *monme* according to their skill. These rates were roughly the same as annual earnings of craftsmen such as carpenter, blacksmith, thatcher, and so on in the *saiban*. On the other hand, the daily wage rate of auxiliary laborers, largely women, was, interesting enough, approximately identical with the "marginal" productivity of labor in agriculture,¹⁴ adjusted by the number of days worked in farming. Since the operating period corresponded to the farming season, the salt producers would have faced difficulties in recruiting such auxiliary laborers if the wage rate had been lower. We are thus able to conclude that an "Invisible Hand" revealed itself in equilibrating the local labor market.

It is really a difficult question to answer if the demand for and supply of labor among various opportunities had any structural relevance with the increase in population in Mitajiri and Kaminoseki, which, as already illustrated in Figure 3, were relatively lower than expected from their higher levels of per capita disposable income. Inflow of skilled workers from Ōshima could be an explanation, for it could lessen the demand for peasant labor in Mitajiri, hence could not stimulate population increase in that county. Another explanation seems to lie in the higher cost of living in the town life which might exhaust to some extent the higher disposable income in this *saiban*. The "capital" intensive agriculture would also need more money expenses.

Nonetheless, no matter how "capital" intensive it was it should be regarded so in the Japanese context, but rather "labor" intensive by European standards. Increases in number of children would be required. In fact the mean household size of Mitajiri peasants increased from 3.75 at the end of the eighteenth century to

¹³ The lowest ratio (16.6%) was recorded in Ogōri *saiban*, neighbor of both Yamaguchi and Mitajiri.

¹⁴ Marginal productivity in each *saiban* is about half of average productivity, for the elasticity of output with respect to peasant population is estimated nearly 0.5 when the Cobb-Douglas production function is fitted to the cross-sectional, inter-village or inter-*saiban*, data of output and inputs in agriculture. See S. Nishikawa, "Productivity, Subsistence, and By-Employment in the Mid-Nineteenth Century Chōshū," *Explorations in Economic History*, 15 (1978).

4.20 in 1864, and the number of household *per se* increased roughly 6,000 to 7,000 during the above period. It was the town people who actually lost their population: about 25 percent of the initial population was lost at the end of the period. Both the number and the size of households in the town decreased. Most town people were not “big” merchants but *petit* retailers and craftsmen, whose trades might be declined in the middle of the nineteenth century.

Anyway the rate of population growth of peasant population in Mitajiri will become still larger if town population is excluded. Such an adjustment however could not explain why the rate was still lower than the one expected from her higher per capita income. Unfortunately we have no more knowledge on “historical demography” of Mitajiri as well as elsewhere in the fief. Mean household size for a majority of *saiban*, although the variation among them was considerable, seems to have increased. It increased in the first half of the nineteenth century even in the *saiban* with no conspicuous protoindustries. Therefore, whether the protoindustrialisation made possible the increase in population is still nothing but a hypothesis to be tested.

IV

While the *han* government of Satsuma, another aggressive anti-Shogunate domain, once tried under Lord Nariakira's leadership (1851–1858) to introduce Western technology such as cotton spinning machine, steam ship, and so forth, the Chōshū government scarcely pursued such a policy for modern (or factory) industrialisation. This may be because the former was much less advanced than the latter. However, it is paradoxical that Nariakira's industrialisation policy had no discernible effect but resulted only in a heavy deficit in the *han* budget, whereas merchants and rich farmers in Chōshū could not find any investment opportunities of their saving and wealth accumulated so far. Even the lord of Chōshū could keep a good amount of money stock in the *han* coffer, of which some were spent in ships and armories in the Restoration war.¹⁵ The only one exception seemed to be a plan projected by the *han* government immediately before the Restoration to build ten factories for candle-stick manufacturing, but the technology on which these were based was nothing more than a handicraft one. And the plan itself was seldom carried out.

¹⁵ It is highly likely that the domainal budget was shrewdly window-dressed to exhibit a chronic deficit. At the same time, borrowing of 80,000 to 90,000 *kan* from merchants in Hagi (the castle town of Chōshū) and in Osaka stood out in the 1840s, while approximately the same amount of money was stocked in the coffer, of which about 20,000 *kan* is estimated to have been spent for military purposes later. See H. Akimoto, “Hagi-han Zaisei Shūshi to Keizai Seisaku [Domainal Budget and Finance in Chōshū Han and its Economic Policy]” *Shakai Keizai Shigaku* (Socio-Economic History), 42 (Feb. 1977). Its aftermath is that one half of the remainder was donated to the Emperor, while the rest was kept in the lord Mori's coffer. However since the silver currency was so drastically depreciated during the course of monetary changes in the 1860s, as will be discussed later, both could not play any remarkable roles in the succeeding phase of the regional and national development.

TABLE 1. SHARES OF OUTPUT BY INDUSTRY (%)*

	1840s	1874	1909
Primary	71.8	73.4	69.7
Agriculture	64.0	63.8	50.9
Forest	4.3	5.8	11.6
Fishing	3.5	3.9	7.2
Secondary	28.2	26.6	30.3
Mining	0.3	1.4	2.1
Paper & Printing	3.9	2.4	0.9
Salt	6.8	6.2	2.6
Food & Drink	6.4	6.2	11.6
Oil & Candle	n.a.	4.8	0.5
Cotton Cloth	7.9	2.3	2.0
Towel			0.3
Silk Yarn			0.7
Cement			2.2
Chemicals			1.3
Miscellaneous	2.9	3.3	6.1
Per capita commodity output at 1874 yen	16.2	14.3	24.1
			(1.5)**

* S. Nishikawa, "Chōshū-Yamaguchi-ken no Sangyō Hatten," in H. Shimbo, and Y. Yasuba, eds., *Kindai Ikōki no Nihon Keizai*, Nihon Keizai Shimbunsha ["Industrialisation in Chōshū and Yamaguchi Prefecture," in *Problems in Modern Transformation of Japanese Economy*, The Japan Economic Journal Co. Ltd.], 1979.

** Annual growth rate (%) of per capita commodity output from 1874 to 1909.

Table 1 compares the levels and structures of commodity output in Chōshū (and Yamaguchi Prefecture from 1871 onward) between three points in time: the 1840s, 1874, and 1909. It shows that the per capita level of real output decreased somewhat from the 1840s to 1874 and the 1874 composition of products was almost identical with that for the 1840s, which suggests that rural industrialisation did not proceed further, nor was it followed by factory industrialisation. In fact merely a few factories were established around 1880, the most famous of which was Onoda Cement Manufacturing Company. It was founded in 1881 by Kasai Junpachi and his associates who were all *shizoku* [former *samurai*]. They borrowed capital from the "new" central government, by mortgaging their own and their fellow *shizoku*'s equity of national bond given to compensate the abolished hereditary stipend of the *samurai*. Evidently the company was an enterprise to keep former *samurai* occupied. Characteristically the former *daimyō*, later Duke Mōri, was requested to be the largest share holder of the company.

During the period from 1868 to 1872, the *han* government that still maintained *de facto* political power over Chōshū, began to undertake a coal mining business on its own account, but the mining was only based upon traditional methods. In 1876 the commoners in the Funaki district—*saiban* system had already been abolished soon after the Restoration—obtained its mining rights from the

administration and set up a cooperative corporation. It aimed to improve the economic welfare in the district by means of profit made in coal mining. From the end of the nineteenth century similar corporations were established. The memberships of such corporations were kept anonymous and the representative of each corporation was entrusted in investing the fund discretionarily to develop coal mining and hence the community. The Russo-Japanese War and World War I provided good profits opportunities and an impetus toward a sustained growth of coal mines in the district.¹⁶

Until 1909, however, the industrialisation in Yamaguchi Prefecture had never been so remarkable. The proportion of coal and manufactured goods was only 30.3 percent of the total commodity output in 1909, which, as is shown in Table, meant a slight increase from 26.6 percent in 1874. Moreover, three-fourths of output in mining and manufacturing were processed food, salt, cotton cloth, paper, and oil and candle stick, all of which were no more than the products of indigenous handicraft industries, while “modern” factories owned by the above mentioned companies, corporations and other personal enterprises accounted for only one-fourth. Furthermore, the ratio of output of primary industry to secondary was 44.6 : 55.4 in Japan as a whole, which apparently more industrial than, or less agricultural than 69.7 : 30.3 in Yamaguchi. Indeed it is in agriculture that some considerable increase in output, land, and land productivity took place during the second half of the nineteenth century.¹⁷

So far it has been shown that the performance of industrialisation in Yamaguchi was not impressive, if not quite negligible. One may wonder, naturally, what caused such a retardation after the mid-nineteenth century. Possible causes and reasons are presumably numerous. Some of them are supposed to be important specifically in Yamaguchi. Both the cessation of seclusionism and the start of foreign trade that followed in 1858 had made unfavorable effects on Chōshū economy in at least two ways. First of all, since silver had been evaluated relatively cheaper in the world market than in Japan, the Shogunate was forced to devalue it in 1860 in order to prevent an enormous outflow of gold. This devaluation decreased the wealth in the form of silver to a substantial extent. Given the ratio of the devaluation, the wealth in Chōshū is estimated to have depreciated to one-third. It may, of course, be an over-estimation of the depreciation, for some portion of wealth might be either stocked in the form of gold or invested into real assets such as land, ships, and others. Anyway merchants and land owners in Chōshū was thus deteriorated and accordingly funds available for later capital formation diminished.

¹⁶ The annual output of coal in 1912 was 235,000 ton and reached the one-million-ton level in 1919 because of World War I and the post-War boom. Source: M. Misaka, *Yamaguchi Ken no Rekishi* [History of Yamaguchi Prefecture], Yamakawa Shuppan-sha, 1971.

¹⁷ The paddy land area in 1881–1883 was on the average not much different from that of the *BFC*, but grew at 2 percent per annum by 1894–1896 and reached nearly 78,000 hectares. Output too increased at the annual rate of 4 percent during the period.

Secondly, in addition to devastating effects of imports of raw cotton and cotton cloth on production and prices of domestic cotton and its products, Chōshū could not benefit from a strong foreign demand for silk and cocoon, since the silk industry had almost been non-existent there in the Tokugawa period. Nor had Chōshū produced tea, which too became an important export commodity after 1858. Thus the peasants in Yamaguchi chose the way toward further specialisation in producing rice, which was obviously not a good substitute for cocoon and tea.¹⁸

That the port of Shimonoseki, located at the south-west end of the territory, was not opened to foreign trade seems to have been another deterrent to the progress which otherwise would have been made in response to new situations in the post-Restoration period. Moreover, even when the new “central” administration began to transplant “modern” mills and factories for silk reeling, cotton spinning, blast furnace, and brick and cement manufacturing, *etc.* as “state” enterprises, the location of such factories and mills was decided from the view point of the nation as a whole, and the region with which we are now concerned was put outside of the consideration.

It is ironical indeed that this was so despite Chōshū-Yamaguchi's position as one of the two main props of the new central government. Some ambitious Chōshū persons went to Osaka and Tokyo to become businessmen, government officials, and army generals instead of remaining in Yamaguchi Prefecture. This drain of entrepreneurial talents must have had an adverse effect on the regional economy. It is in fact not until the decades after World War II that we can find industries such as chemicals, petro-chemicals, automobiles, and so forth in both former salt field and recently reclaimed land along the shore north of the Inland Sea in Yamaguchi (major sites of them are indicated by ⊗ in Map). It is probably both the loss of funds for capital and the lack of entrepreneurial talents which explain why it took such a long time for a protoindustrial region to metamorphose into a modern industrial area in the growing national economy.

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¹⁸ By the early twentieth century, however, sericulture became somewhat increasingly spread over the prefecture and the output in 1922 was 245,000 *kan*, from which to 1930 it really doubled. Source: Misaka, *op. cit.*