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The Journal of Asian Studies, Vol. 19, No. 3. (May, 1960), pp. 255-272.

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Feudal Revenue in Japan at the Time of the Meiji Restoration

W. G. BEASLEY

DESPITE the existence of an enormous literature dealing with the Meiji Restoration and its origins, it is still surprisingly difficult to acquire precise information about some aspects of Japanese society in the middle of the nineteenth century. One such difficulty is that of obtaining general quantitative data about the great feudal domains (*han*) which constituted the major political and economic units of the country. This is not to say that details concerning the domains are impossible to find. Many records are readily available, even in print, and some have been used by scholars to support or illustrate general statements. It is commonly accepted, for example, that agrarian productivity increased greatly in Japan between the seventeenth and nineteenth centuries and that land dues were extremely high, especially at the end of the period. It is possible to cite domains as examples for each of these generalisations. On the other hand, it is never very clear whether the examples themselves are typical or merely random, how far they approximate to or differ from the norm. Nor has there been much attempt to discover whether the wide differences which existed between one domain and another in these matters followed any identifiable pattern. It is with these problems that the present article will deal.

Material on which a study of this kind could be based exists in a number of Japanese archives, both central and local, printed and manuscript. Completeness and accuracy would require that many of these archives should be used. However, something useful can be achieved—enough to indicate lines of approach, if nothing more—by a much less complex process. The Meiji government, soon after it came to power in 1868, called for returns of assessed annual product, taxation, and population from all domains. These were completed within the two years following and were eventually published under the title *Hansei ichiran*.¹ The figures used in this article are drawn entirely from that publication.

Use of these figures has some advantages, as well as certain limitations. In the first place, the returns are all of about the same date and can reasonably be regarded as providing a cross-section of feudal institutions at a single point in time. Moreover, they were drawn up in response to a request for specified information and hence deal in similar manner with similar material. They are, therefore, comparable one with another. Yet there was still a good deal of local variation in methods of compilation and in the completeness of the information given.² Again, the successive stages of

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¹ Nihon shiseki kyōkai, *Hansei ichiran* [*Summary of han governments*], 2 vols. (Tokyo, 1928–9). The entries are arranged alphabetically (*iroha* order) by name of domain.

² Specific instances will be given below, as they become relevant to particular points of the analysis. There is one point which might be made here, however, since it refers to the question of comparability. Not all the details given in the returns are for the same date. For example, most of the revenue returns

compilation, copying, editing and publication provided ample opportunities for the intrusion of clerical errors, some of them so gross as to be detected by simple inspection. Thus one faces at the outset some difficulty in deciding which returns can legitimately be used. The rule adopted here has been to eliminate from the sample any domain for which the return is either incomplete or obviously inaccurate under *any one* of the headings relevant to our discussion. Consequently, the same domains are treated under each heading; and while it is impossible to be sure that the returns chosen are accurate in every particular, it is unlikely that the degree of inaccuracy is great enough to invalidate the overall result.

One further point needs to be emphasised in these preliminary notes, though it will occur again at later stages in the analysis. All the returns were drawn up by officials of the domain in question. Hence they give a picture of the domain as seen by its own administrators, conditioned by the knowledge available to them and their efficiency in checking it. They do not necessarily present a picture of objective fact. In other words, the material can properly be used in a discussion of domain revenues, but would be suspect as a means of determining the burden of taxation on the farmer.

Rather less than half the total number of domains are represented in the figures given here,³ but in selecting those to be examined an attempt has been made to ensure a fairly wide spread in terms of size, type, and geographical location. Size is measured by reference to the rated annual yield of the domain as recorded by the Tokugawa government. This is known as the *kokudaka* (more accurately, *hondaka*) and is expressed in *roku* of rice (1 *roku* = 5 bushels approx.). The smallest fief held by a vassal-in-chief (*daimyo*) was of 10,000 *roku*. A domain of moderate size would be between 50,000 and 100,000 *roku*, while anything more than that was considered large. All domains of 50,000 *roku* and above are included in the sample, provided that their returns are not disqualified by obvious inaccuracy or incompleteness. A further 52 smaller domains are added to bring the total to 120.

Domains can also be distinguished in accordance with the hereditary relationship of their lords to the Tokugawa family. Direct vassals of the Tokugawa were known as *fudai*, with whom one can conveniently include branch houses of the Tokugawa family itself (*sanke*, *sakyō* and *kamon*).⁴ Together these account for rather more than half the domains cited: 68 out of 120. The remainder are *tozama* domains, those of the "outside" lords who had been enemies or rivals of the Tokugawa before their victory in 1600. They predominated in the southwest and northeast of the country and included more of the very large domains than did the *fudai*. This is reflected in the sample.⁵

are based on five-year averages, but they are not always for precisely the same years (though the differences are small). Some domains gave ten-year averages, others gave no indication what practice they had followed. I have made no attempt to compensate for these differences, since it would be extremely difficult to do so, and there is in any case no indication that one period of years would necessarily be more typical than any other. I have not used returns which contained evidence that they had been seriously distorted by the occurrence of some special event like flood or typhoon.

³ There were more than 260 domains during most of the Tokugawa period, the number varying slightly from time to time. It is difficult to determine exactly how many existed at the time of the Meiji survey, since a good many changes were made as a result of the civil war early in 1868, but *Hansei ichiran* includes returns from 281.

⁴ In all tables—and generally throughout the article—the term *fudai* should be understood as including Tokugawa branch houses.

⁵ As a check on the reliability of the regional variations revealed by the figures used in this article,

In providing for geographical divisions, the following regions have been chosen: (i) Kyushu; (ii) Shikoku and Western Honshu, including most of the provinces bordering the Inland Sea; (iii) Central Honshu, comprising the provinces round Kyoto; (iv) the Tokaido and Kanto, from Nagoya to the area around Edo; (v) the remaining provinces of the north and northeast. Twenty domains are included from Kyushu, twenty-five from each of the other regions.

Table 1 sets out details of the distribution of the sample. The domains cited are identified individually in the Appendix, and the approximate position of each is indicated on the sketch map.

TABLE 1. SIZE, TYPE AND LOCATION OF DOMAINS SELECTED FOR STUDY. (TOTAL = 120)

Size in <i>ko</i> ku	Kyushu		Shikoku and West Honshu		Central Honshu		Tokaido and Kanto		North and Northeast	
	T*	F*	T	F	T	F	T	F	T	F
100,000 and over	5	1	6	5	1	3	—	4	6	2
50,000—99,000	5	3	2	2	1	6	—	9	3	4
under 50,000	4	2	6	4	6	8	3	9	4	6
Totals	14	6	14	11	8	17	3	22	13	12

*Note: T = tozama; F = fudai. The latter also includes the domains of Tokugawa branch houses.

Assessed annual yield of the domain (kusadaka).

During the Tokugawa period it was customary to assess the value of a fief or domain in terms of its annual product. In principle, each field was supposed to be regularly surveyed, its yield estimated, and the result expressed in *ko*ku of rice. The total yield for all fields within the domain then became its *ko*ku*daka*. However, this relatively simple picture is complicated by the fact that there were different kinds of *ko*ku*daka*, each distinct in meaning. Two of them, *hondaka* and *kusadaka*, concern us here.

In the late sixteenth and early seventeenth centuries, when the great lords were successfully imposing tighter control over land and men after a long period of civil war, land registers were drawn up for every plot and every village in the country. The fields so registered were the *honden*, the total of their yield in any given domain was its *hondaka*. It was this figure which the Tokugawa government recorded as

averages were also worked out comparing the domains by type (*tozama* or *fudai*) and size (over 10,000; over 50,000; and over 100,000 *ko*ku respectively). The only consistent variation to emerge was that the *kusadaka* figures (see next section) were higher for *tozama* than *fudai*. For the rest, the results varied somewhat from the overall regional averages, but for each set of figures there was a regional pattern not so very different from that given by analysis of the whole.

TABLE 2. LOCAL AND REGIONAL AVERAGES

REGION	Serial Nos. of Domains	<i>kusadaka</i> as % of <i>hondaka</i> (Graph A)	Ordinary revenue as % of <i>kusadaka</i> (Graph B)	Ordinary revenue as % of total revenue	Ordinary revenue as % of <i>hondaka</i> (Graph B)	No. of feudal class (<i>shisōsu</i>) per 1000 <i>hōku</i> of <i>kusadaka</i> (Graph C)
KYUSHU	1-4	134.7	36.38	96.4	49.00	149.1
	5-6	151.1	38.78	81.2	58.60	147.5
	7-11	168.9	33.96	98.3	57.37	95.5
	12-16	128.7	37.67	95.3	48.50	62.5
	17-20	136.4	48.56	94.8	66.22	72.7
	Aver. (1-20)	144.3	37.35	92.3	53.92	97.6
SHIKOKU and WEST HONSHU	21-24	163.6	44.50	96.5	72.80	94.5
	25-28	169.4	46.34	97.9	78.50	90.2
	29-31	257.3	21.86	90.2	56.24	51.0
	32-36	124.4	45.22	96.3	56.26	55.7
	37-41	125.8	44.23	97.7	55.63	48.7
	42-45	120.1	38.49	92.5	46.22	74.9
Aver. (21-45)	154.9	38.50	95.3	59.64	67.9	
CENTRAL HONSHU	46-51	108.0	43.53	90.9	47.00	55.9
	52-54	110.5	47.68	91.4	52.67	66.7
	55-58	100.7	37.16	92.4	37.44	47.5
	59-61	110.7	41.88	98.6	46.36	54.9
	62-66	106.0	42.33	91.3	44.87	59.0
	67-70	104.5	32.77	96.7	34.26	38.4
Aver. (46-70)	106.4	39.77	93.8	42.33	51.7	
TOKAIDO and KANTO	71-75	134.6	33.57	92.1	45.17	55.4
	76-78	141.7	24.75	93.2	35.09	39.6
	79-83	123.1	24.71	97.7	30.40	44.2
	84-87	119.2	24.70	98.1	29.44	34.7
	88-91	122.8	30.38	96.4	37.33	47.9
	92-95	111.5	32.35	94.5	36.08	46.5
Aver. (71-95)	128.4	30.16	94.0	38.73	49.2	
NORTH and NORTHEAST	96-100	130.9	44.88	99.1	58.70	48.7
	101-105	134.7	34.29	86.5	46.20	70.6
	106-109	123.6	35.73	93.2	44.11	59.9
	110-114	164.1	23.56	89.9	38.68	100.9
	115-120	190.3	38.90	93.2	74.01	96.0
	Aver. (96-120)	140.8	39.03	95.6	54.95	66.3

Note: The figures given in this table have been obtained by aggregating the actual returns for each domain (in *hōku* or persons as appropriate) and then calculating the relationships between aggregates, not by the separate percentages. The result is therefore weighted by relative size of domains.

the domain's official value, and in many cases it remained unchanged throughout the period from 1614 to 1868.⁶ Even where changes did take place they seem to have resulted from adjustment of domain boundaries rather than new assessment of the fields within them. The *hondaka* therefore provides us with a useful datum line: it

⁶ Eight of the domains in the sample are of this kind: those numbered 5, 11, 15, 18, 30, 55, 72 and 117 in the Appendix. It is worth noting that these domains do not appear to have any special distinguishing characteristics which would mark them off as a group from the others, at least in terms of the figures for yield, revenue and population with which we are concerned in this article.

represents the original assessed yield (probably for the early seventeenth century) of the land comprised within the domain's 1868 boundaries.

An assessment of this kind soon became outdated as a measure of actual yield in an age when productivity of the soil and the area under cultivation were both increasing. Tax collectors needed something more reliable. Officials found it necessary to bring their records up to date by fresh surveys, which furnished a working estimate of the land's annual yield at any given time. This was usually called the *kusadaqa*. Ostensibly, a comparison of this with the *hondaqa* should give us an index to the degree of change in agricultural production.

Unfortunately for the historian, however, the *kusadaqa* was not a complete and reliable record of the crop. Surveys seem to have been made at irregular and often lengthy intervals, so that they failed to keep pace with the growth of production when this was rapid.⁷ In any case, changes in the area under cultivation were what officials were most likely to record. Indeed, in many domains the *kusadaqa* would appear to have been arrived at simply by adding to the *hondaqa* a figure for the yield of new fields (*shinden*) and subtracting one for fields which had been permanently abandoned or destroyed by natural disasters. Little adjustment was made for changes in yield per acre.⁸

These considerations must make us wary about what conclusions we draw from a comparison between *kusadaqa* and *hondaqa*. For example, the result could not properly be regarded as an index to the increase in production, for it is doubtful whether it gives full weight to the much higher yields resulting from improved techniques and uncertain how far villages were able to falsify their returns. Yet the comparison is still worth making in a study primarily concerned with revenue: it shows the growth in taxable capacity, in so far as this was known to and recorded by the domain. It is in that light that we will here consider it.

The figures given in the tables⁹ show *kusadaqa* expressed as a percentage of *hondaqa*. Thus a figure of exactly 100 indicates no change at all in recorded taxable capacity during the Tokugawa period. Less than 100 (a rare case, but not unknown) signifies a drop, more than 100 an increase. In the few examples where a figure of 200 is reached, the domain had doubled its taxable value since the fields were first assessed.

It is convenient to begin by looking at the local and regional averages (Table 2). In Kyushu, percentages average about 130 in the south, east and north of the island, but rise to 150 or more in Higo and Hizen (chiefly the great domains of Kumamoto and Saga). Equally high or even higher figures are found in Shikoku

⁷ See Thomas C. Smith's article, based on the tax records of 11 villages in different parts of Japan, "Land Tax in the Tokugawa Period," *Journal of Asian Studies*, XVIII (1958), 3-19. On Tokugawa agriculture generally, with special reference to increases in production, the reader is referred to the same author's recent book, *The Agrarian Origins of Modern Japan*, Stanford, 1959.

⁸ This conclusion is supported by the facts cited in Thomas C. Smith's article, noted above: in almost all the villages he studied the assessed yield was constant or nearly so from the 17th to the 19th centuries, while at least one recorded increase in assessment was due to the addition of new arable to the tax rolls. See also Oyama Shikitaro, "Bakumatsu ni okeru denso oyobi jōnōkin," in *Bakumatsu keizaishi kenkyū* (Tokyo, 1935), 298-374, for similar evidence concerning some Tokugawa estates.

⁹ Column (v) of the Appendix gives figures for individual domains. Local and regional averages are given in Table 2 and in graph form in Graph A. The averages given were actually prepared by aggregating the relevant figures in *koqu*, not by averaging the separate percentages for each domain. The results are therefore weighted in accordance with the size of domains. The same method has been followed in arriving at all the figures given as averages in Table 2.

and the western tip of Honshu (i.e. Chōshū), with a drop to about 125 along the north coast of the Inland Sea and adjacent areas. Averages then fall off sharply in Central Honshu, to 110 or even less. Along the Tokaido and in the provinces round the Tokugawa capital of Edo there is an increase again to something like 130, which is maintained in the mountain and coastal regions immediately to the north. In the extreme northeast, however, percentages once more exceed the 150 mark. The graph depicting this takes the form of a shallow bowl: Central Honshu provides the low point (110%), with a group of provinces of somewhat higher average on either side (130%) and higher levels still (150% or more) in the southwestern and north-eastern regions.

One could not expect that the figures for individual domains would conform exactly to this pattern. The averages, in fact, tend to conceal some very wide variations. This becomes clear if one arranges the domains in groups by region and percentage, as is done in Table 3. In the three regions where the averages run highest (southwest, west and northeast) there are none the less a substantial number of

TABLE 3. *Kusadaka* AS A PERCENTAGE OF *hondaka*:
NUMBER OF DOMAINS BY REGION AND PERCENTAGE

<i>kusadaka</i> as % of <i>hondaka</i>	Number of domains				
	Kyushu	Shikoku and West Honshu	Central Honshu	Tokaido and Kanto	North and Northeast
200% and over	3	3	—	—	2
150-200%	3	5	—	1	5
130-149%	3	8	—	6	6
110-129%	6	5	9	14	7
Under 110%	5	4	16	4	5

domains which fall below 110%: 14 out of 70. It is the incidence of high figures (21 out of the 70 are over 150%) that really accounts for the overall result. By contrast, the other two areas have a very much narrower spread. In the Tokaido and Kanto, 14 out of 25 domains fall within the same grouping as the regional average, i.e., between 110% and 130%, and only one exceeds 150%. In Central Honshu the degree of consistency is even greater, 16 being under 110% and the remaining 9 only slightly higher. It is, therefore, at the geographical extremes rather than in the centre that averages tend to be misleading.

We must be careful not to read too much into these figures. A high taxable value might well indicate a greater degree of economic growth than a low one; but it might equally be the result of greater administrative efficiency in carrying out surveys or more pressure on the part of the domain to increase taxation. Nor can a low percentage necessarily be equated with economic backwardness. It might indicate that development had taken forms which were less easily recorded in the assessments. To these points it will be necessary to return later. Yet one conclusion might be tentatively stated. The relatively small difference between the seventeenth and nineteenth

century estimates for the central area probably reflects the fact that land there had been thickly settled and intensively cultivated for several centuries. As a consequence, the margin of additional acreage in this region which could easily be brought under cultivation was small, even at the beginning of the period. In remoter regions, on the other hand, there were many localities where expansion was fairly simple in itself and became probable as soon as Tokugawa rule had restored peace and order to the country. This fact alone would explain most of the differences between one area and another.

Whatever their explanation, the nature of these differences suggests the possibility of a geographical shift in the balance of economic power which could be of some importance to the study of nineteenth century politics in Japan. However, the wealth and strength of a domain did not depend only on its success in achieving an increase in annual value. It depended also on the proportion of the yield which it managed to gather into its own hands in the form of dues. It is therefore to a consideration of feudal taxation that we must now turn.

Domain revenues.

In recording revenue, the reports made by the domains distinguished two categories. The first, usually called "regular taxation" or something similar, was the revenue drawn from the villages in the form of traditional feudal dues and any special imposts on farm incomes that might be in force for the time being. It corresponded roughly to a land tax and is here treated as the domain's ordinary revenue. The second category, described as "miscellaneous" or "additional," comprised such items as the levies imposed on merchant guilds or taxes on the movement and purchase of goods. It was, in other words, derived largely from commerce.¹⁰

Ordinary revenue was traditionally a tax in kind, collected in rice and recorded in *ko*ku thereof, though by the middle of the nineteenth century part of it was paid in cash in many domains and was so entered in the returns. Additional revenue seems to have varied more widely. The most common entry was in cash, but entries in terms of rice and other grains, root crops, tea, silk, and paper are all to be found, some of them frequently. Reducing them to a common notation for purposes of comparison is difficult. Fortunately it is often done for us by the compilers of the returns themselves, who tend to give equivalents in rice or cash for most commodities. Where they do not, it is possible to derive similar conversion factors for oneself by comparing different entries. The process is arbitrary and it is doubtful whether the result is at all accurate in terms of market values, but at least it provides a means of comparison over the whole range of the sample.¹¹ Moreover, the actual quantities involved under the heading of additional revenue are for the most part too small to weaken seriously the conclusions which can be drawn about taxation as a whole.

¹⁰ In describing this distinction as being between a sort of land tax on the one hand and mostly commercial taxes on the other, I am generalising from an inspection of the returns and undoubtedly oversimplifying the picture. See Thomas C. Smith's note on *komono-nari*, "Land Tax," p. 9.

¹¹ All figures used in preparing these notes were reduced to *ko*ku of rice (disregarding items which amounted to less than 1 *ko*ku). Where it was necessary to convert from cash to rice, the following equivalents were used: 80 *kanme* copper = 1 *ko*ku rice; 1 *kanme* silver = 1.5 *ko*ku rice; 8 *ryō* gold = 1 *ko*ku rice. The last, especially, differs sharply from the rate (1 *ryō* = 1 *ko*ku) which is usually accepted for earlier years; but it is the rate most commonly found in the returns and may reflect the sharp rise in prices after 1864. It seems probable in any case that the conversion rates used by the domains were approximate and conventional, adopted for bookkeeping purposes.

The figures given in Table 2 make it clear that ordinary revenue as described above accounted for over 90% of the total in nearly all domains, the average being a little less than 95%. Exceptions, in which the proportion was markedly smaller, were rare. Three occurred in Kyushu, the most important being Kumamoto, three more (including Matsue) in western Honshū and four (including Hikone) in the central zone of the island. In the whole area to the east and northeast there are only three others: Nishio, Matsushiro and Yonezawa. In these few exceptional domains, additional revenue accounted for between 10% and 20% of the whole. Even so, one cannot be sure that this apparent increase over the norm is a real one, since the particular entries which make it up are given mostly in rice and might therefore represent little more than a different system of accounting.¹² However this may be, it is evident that the figures for these domains do not greatly affect the overall picture, which is one of remarkable consistency. In general, it seems, a feudal government's revenue still depended heavily on land dues of the traditional kind. There is no widespread evidence of such dues being superseded, or even substantially reinforced, by the direct taxation of commerce.

All the same, there were considerable differences in the level of taxation between one part of Japan and another. They can readily be traced in the tables. Columns (vi) and (vii) of Appendix I show the total revenue and ordinary revenue of each domain measured as a percentage of the *kusada-ka*, that is, of the annual product in so far as it was officially known and recorded. Local and regional averages for ordinary revenue only are to be found in Table 2 and in graph form in Graph B. Since the pattern is uniform (at a slight difference in level) whether one takes ordinary or total revenue as one's guide—and we have already alluded briefly to the relationship between the two—the analysis which follows will be concerned only with ordinary revenue, i.e. that which approximates to the yield from land tax.

Regional averages suggest that over most of the country ordinary revenue was a little under 40% of the recorded annual product, with the clear exception of the Tokaido and Kanto region, where it was nearly 10% less. Again, however, there are some interesting variations within this pattern. These are revealed if we group the domains in accordance with individual percentages, as is done in Table 4.

In Kyushu, over half the domains fall within the median group at 35–44%, with an approximately equal spread above and below that range. There is an upward turn in Bungo, occasioned by two figures of over 50%, but the regional average of 37.35 seems on the whole to be a valid index to the actual situation. This is not so in Shikoku and western Honshu. There, rather less than half the domains fall within the 35 to 44% group, but very nearly as many come in the next group higher. One might well have expected a regional average of something nearer 45%, as is also suggested by the local averages given in Table 2. The fact that the figure is under 39% is due almost entirely to the very low percentages for Yamaguchi (Chōshū) and its two neighbours at the extreme western tip of Honshu. Their combined average is under 22% and pulls down that of the entire region.

¹² It is possible, for example, that these domains have included as additional revenue the returns from special levies on samurai and farmers. Such levies were widespread in this period. They were euphemistically described as loans by domain governments, but constituted in fact a more or less permanent addition to normal dues. Since they are not specifically mentioned in the returns it is not clear whether they were treated as regular or as additional revenue. The former is more likely, but practice may well have differed from place to place.

TABLE 4. ORDINARY REVENUE (LAND TAX) AS A PERCENTAGE OF *kusadaka*:
NUMBER OF DOMAINS BY REGION AND PERCENTAGE.

Ordinary revenue as % of <i>kusadaka</i>	Number of domains				
	Kyushu	Shikoku and West Honshu	Central Honshu	Tokaido and Kanto	North and Northeast
55% and over	3	1	2	—	—
45-54%	1	9	5	—	5
35-44%	11	11	12	3	9
25-34%	5	3	6	15	4
under 25%	—	1	—	7	7

The central area of Honshu shows a pattern not unlike that of Kyushu, though slightly higher, but in the Tokaido and Kanto there is a marked drop. In this part of Japan most domains had an ordinary revenue which ran at between 25 and 35% of the *kusadaka*, with more below that range than above it. The provinces immediately west and north of Edo give the lowest figures, but the degree of variation is not great. By contrast, the average for the north and northeast region, like that for western Honshu, is largely influenced by one particular domain. For the most part the figures are low and one would expect an average of perhaps 35%, halfway between those for the Kanto and the rest of the country, but in practice the great size of the Kanazawa domain (over one million *ko*) means that its figure of almost 47% has a disproportionate effect on the aggregate. It raises it—rather misleadingly—to a level not far different from that of the southwest.

One fact stands out clearly from all this. The general level of taxation, though undoubtedly very high, was not quite as high as is often thought. It is usually said that feudal dues took something like 40% of the farmer's crop at the beginning of the Tokugawa period and as much as 60% or more by the end of it. The second half of this statement seems open to question. There were some domains where it held good, of course, but they were few. Only six of the 120 had tax rates of 55% or over. The explanation of this apparent contradiction presumably lies in the great local differences in tax levels, which varied not only from one domain to another, but also from village to village, even from farm to farm,¹³ so that some paid tax at crippling rates, while others escaped comparatively lightly. This would explain contemporary complaints. It would also help to account for the emergence of a rich farmer class at a time when taxation was supposedly taking the whole of the cultivator's surplus.

More difficult to explain than random local variations are the regional differences which emerge from the description we have given. One might summarise these by saying that land dues seem to have been much lower in relation to estimated crop yield in the Tokaido, Kanto and northeast than in the centre and the west. To what are these differences to be ascribed?

¹³ Smith, "Land Tax," 11-14. It is interesting to note that the villages he cites vary considerably in the rate of tax they bore. There were even two in the same domain, Kōriyama, of which one paid about 45% and the other less than 40%. According to the *Hansei ichiran* figures (No. 57 in the Appendix) the average for Kōriyama was 35.48%.

A possible answer is to be found in the differences in economic development between one region and another. In studying this possibility, one might start by assuming that the level of taxation in a given area depended in part on the ability of the villages to pay. It is a reasonable assumption, for there is ample evidence in contemporary books and diaries—to say nothing of peasant revolts—that domain governments were making every effort to increase revenue throughout the later years of the Tokugawa period; and it is difficult to see why domains like Yonezawa and Yamaguchi, which were noted for their achievements in this matter, should have remained satisfied with a tax rate of about 20% of the *kusadaka* (taxable value) if more could easily have been obtained.

The choice of these two domains as examples raises a difficulty which should be disposed of before we continue. Both have exceptionally high *kusadaka*, just under twice the *hondaka* in one case and even more in the other. Since it would have been possible for officials to achieve a rise in tax returns as easily by increasing the assessment of the land as by raising the rate of tax, one should obviously consider the two sets of figures in conjunction with one another. This can be done by measuring ordinary revenue as a percentage of the *hondaka*, that is, in effect, multiplying the growth in taxable value by the rate of taxation. The result (local and regional averages only) is shown in Table 2 and by the dotted line in Graph B. These give a pattern not much different from that which emerged from our earlier calculations, except that all the figures are higher and that the average for Central Honshū is in this instance only a little above that for the Kantō, well below those of the other three regions. Thus, whatever may be true of the figures for particular domains,¹⁴ there is still a regional difference which needs explaining.

Returning, then, to our assumption that the level of tax in a domain was related to the population's ability to pay it, this would imply that a high degree of economic development might well be reflected in a high tax rate. Early in the Tokugawa period most farmers engaged in subsistence farming. Many still did so in the nineteenth century. Clearly there was a point beyond which such people could not be taxed without driving them off the land by the threat of starvation. On the other hand, the eighteenth and nineteenth centuries saw a considerable increase in the growth of commercial crops like cotton and sugar and silk, a process accompanied by more efficient land utilisation, better farming methods, higher yields. In areas where this kind of development took place the farmer was capable of paying more taxation, without necessarily sacrificing the whole of the increase in his annual profit, provided that the crops he grew had a greater total value than the rice which his land would otherwise have produced. Accordingly, the tax official was free to set his rates high as a means of tapping the land's greater productivity, instead of making a new assessment of its value. This is the corollary of what was suggested above: the link between revenue and *kusadaka* could be made to work both ways. From the domain's point of view, raising the tax rate had the same effect as raising the taxable value (*kusadaka*).

It has long been established that taxation did increase in many areas during the last hundred years or so of Tokugawa rule. The question that has yet to be answered

¹⁴ By this method of calculation, Yamaguchi (No. 30 in the Appendix), at just over 56%, comes very near its regional average, while Yonezawa (No. 110 in the Appendix), at approximately 36%, still remains low by comparison with other domains in its area.

is whether there is any correspondence between the extent of this change on the one hand and economic growth on the other. The only evidence that can be offered here is speculative and rather inconclusive. Tax rates were high in Central Honshu, where the raising of cash crops was common, and along both shores of the Inland Sea, as well as in northern Kyushu. All these localities are regarded as having been prosperous and economically advanced. Even in the north, the mountain province of Shinano, a centre of silk culture, had higher tax rates than its neighbours.

Nevertheless this does not afford an explanation of all the regional variations. That the northeast was backward is certain, but the same surely cannot be said of the Kanto, which nevertheless had the lowest tax rates of all. We are forced to conclude that there are other factors, yet to be identified, which need to be taken into account.

One factor that might be relevant is the geographical distribution of the ruling feudal class. By the nineteenth century economic change had brought both domain governments and individual samurai heavily into debt to the city merchants, with the result that both were concerned to put heavier pressure on the villages to increase taxation. It seems likely that the needs of the taxing authority in this sense would differ from one area to another as samurai numbers differed. More samurai meant greater possibilities of control and supervision of the farming population, perhaps greater efficiency in tax collection. More samurai families to be supported would mean a greater demand on the economic resources of the domain. Before taking the argument further, therefore, let us examine briefly the extent to which the proportion of samurai in the population varied from area to area.

Samurai population figures.

The returns called for in 1868 were supposed to include full population figures, though not all of them did so and many are in a form difficult to use. For example, it is sometimes impossible to make out whether so-called totals actually include or exclude the sub-totals given for special categories of persons, such as outcasts, priests, or even samurai. Guesswork in such matters introduces a considerable possibility of error. This would be greater still if one attempted to distinguish between samurai proper and the lowly *sotsu*, who served as footsoldiers in war and as guards, messengers or doormen in times of peace: local usage differed widely when it came to identifying sub-divisions of the feudal class. However, the worst dangers can be avoided by taking the total figures for feudal population, without distinction between samurai and *sotsu*, and setting these figures directly in relation to the assessed product of a domain, rather than against its total population.¹⁵ This serves the purpose of affording a rough measurement of the size of the feudal class in relation to economic resources.

The figures given in the tables show the number of members of the feudal class, including women and children, for every thousand *kokū* of *kusadaka*. Results for

¹⁵ Despite the unreliability of the figures, it is worth noting that a graph drawn to show feudal class as a percentage of total population proved to have a general shape not unlike that of Graph C. A few figures in south Kyushu were very high (25% or more), with an average of just under 10% elsewhere in that island and in Shikoku. In western Honshu figures varied about approximately 7%, in the central region about 6%, and the Tokaido and Kanto about 5% or a little under. North along the Japan Sea coast the average was something like 7% again, with a sharp rise in the extreme northeast to 15% or even more. A further graph, drawn to show total population in relation to *kusadaka*, showed wide individual variations (round a mean figure not far from the traditional "one person per *kokū*," the variations being greater in the northeast and southwest than in the centre), but there was no apparent regional pattern.

each domain are to be found in column (viii) of the Appendix. Local and regional averages are in Table 2 and in graph form in Graph C.

A glance at Graph C makes it obvious that there was a much larger samurai element in the population at the periphery than at the centre. This accords well enough with what one would expect. In the northeast and southwest were the domains of most of those lords who had opposed the rise of the Tokugawa to power. Many of them had suffered military defeat and confiscation of part of their holdings; and since the primary bond between samurai and lord was one of personal loyalty, loss of land did not necessarily involve a commensurate reduction in the number of a domain's retainers. As a result, one would expect to find a higher concentration of samurai in such areas than in those where the Tokugawa and the *judai* predominated, that is, in the Kanto and Tokaido.¹⁶ In the latter region there were 50 members of the feudal class or less for every thousand *ko*ku of *kusadaka*. At an average of five persons per household, this means roughly one family for every 100 *ko*ku. The figures for the central region of Honshu are much the same. So are those for the provinces along the north shore of the Inland Sea. In Shikoku, parts of Kyushu and much of the northeast, however, the figure rose to almost 100 persons per thousand *ko*ku, while in the extreme south of Kyushu it was higher still.

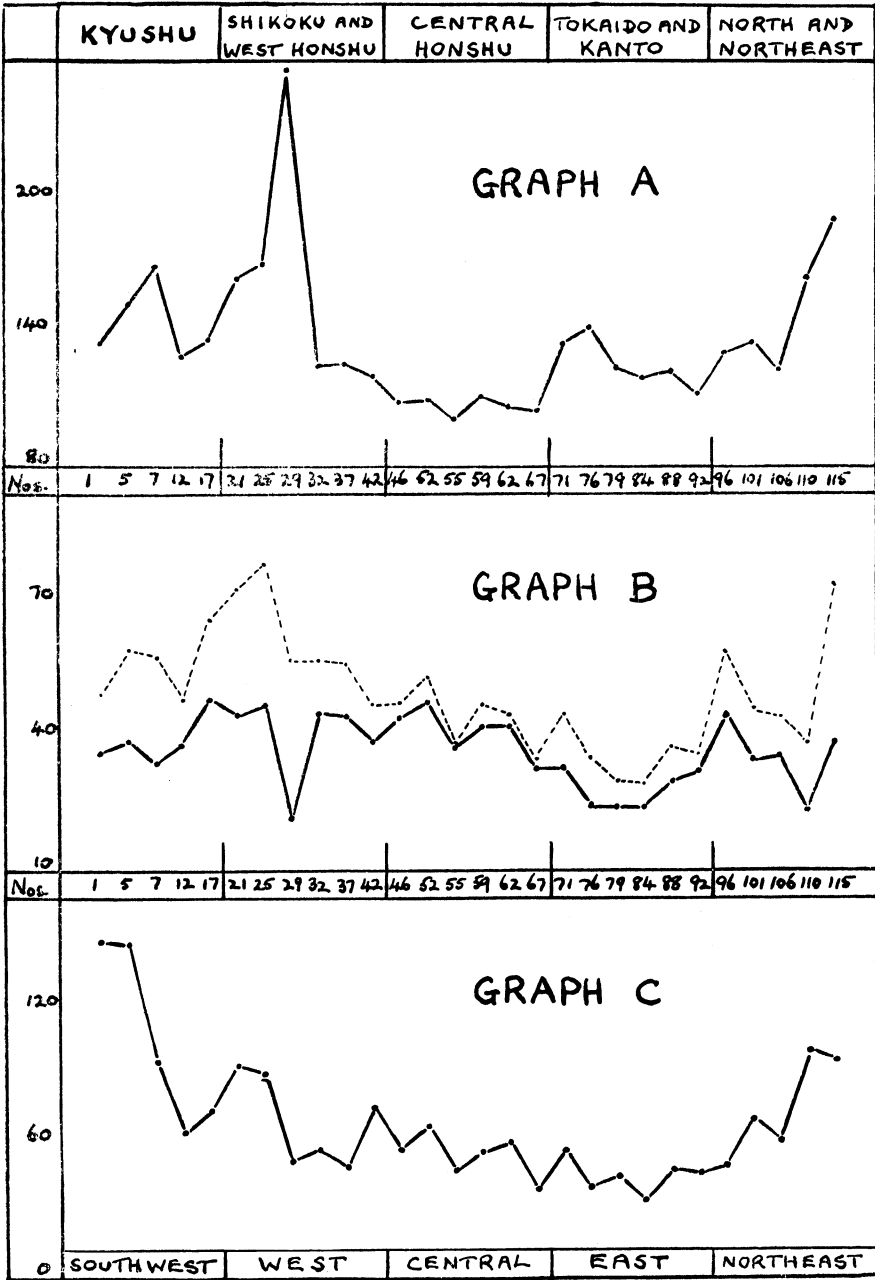
Comparing the figures for samurai population (Graph C) with those for *kusadaka* (Graph A) and revenue (Graph B), it becomes immediately obvious that no correlation can be established for the Kyushu region. Indeed, the variations between individual domains are so great in that region that it is doubtful whether even the local averages are at all meaningful. In the north and northeast there is a fairly close correspondence between the curves for *kusadaka* (taxable value) and samurai population, which might suggest a connection between the latter and the opening up of new land for cultivation, but neither bears much relation to the graph for revenue. Here again the range of individual differences is very great.

This leaves us with the figures for the rest of Honshu and Shikoku. Here there seems to be some general correlation between revenue and samurai population, in that both sets of figures descend gradually from a high point in Shikoku to a low point in the area round Edo.¹⁷ In central Honshu and the Kanto there is even a fairly detailed correspondence, at least in local averages. Thus the suggestion with which we started this section, that unevenness in the geographical distribution of the privileged feudal class might be expected to influence tax levels, receives some support from an analysis of the returns.

It is not the purpose of this article to attempt to work out the full implications of this and other points arising from the figures we have given. To do so would need more detailed knowledge and more precise methods of analysis than the author can lay claim to. Yet before leaving the subject there is one general consideration to which

¹⁶ The matter is almost certainly more complex than this, however, for there is no direct correlation between *judai* status and a low level of samurai population in the domain. On the other hand, *judai* territories varied less widely in this matter than did *tozama*. Separate regional averages (starting from Kyushu on the left) are as follows: *tozama*: 100.9, 64.0, 56.0, 34.6, 65.3; *judai*: 77.2, 79.8, 50.2, 49.7, 69.6.

¹⁷ This is still more marked if one takes the figures for ordinary revenue as a percentage of *hondaka*, since this eliminates the irregularity due to exceptionally high *kusadaka* and low tax rate in Chōshū.



GRAPH A: *Kusadaka* as a percentage of *hondaka*.

GRAPH B: Ordinary revenue as a percentage of *kusadaka* (solid line);

Ordinary revenue as a percentage of *hondaka* (dotted line).

GRAPH C: Number of feudal class (*shisotsu*) per 1000 *koku* of *kusadaka*.

Note. The numbers plotted in these graphs are the local averages given in Table 2. The line of numbers interpolated between Graphs A and B and between Graphs B and C refers to the individual domains listed in the Appendix. Only the number of the first domain in each group is given.

we might usefully turn, namely, the extent to which this picture of the feudal economy throws light on political events of the late Tokugawa period.

Ever since Tsuchiya's early study of feudal finance,¹⁸ historians have accepted the conclusion that the intensity of a domain's political activity in the nineteenth century depended, at least in part, on the success with which it had overcome financial crisis. This, in turn, was directly linked with its success in increasing revenue, since there were few opportunities for a large reduction in expenditure. Regional differences in taxation are therefore of great interest to the political historian. Particularly useful in this connection are the figures showing ordinary revenue as a percentage of *honda*ka. Assuming that tax rates had not decreased since the seventeenth century—a fairly safe assumption, since they are commonly supposed to have risen—these figures give us a rough indication of comparative tax yield in relation to the original value of the domain. In other words, the higher this percentage, the greater were the domain's financial resources in 1868 as compared with those it had controlled at the beginning of the period.

It can readily be seen from Table 2 (and the dotted line in Graph B) that, if this is a valid way of measuring relative economic strength, the areas where feudal finances had most improved, that is, where ordinary revenue was 55% or more of the *honda*ka in 1868, were as follows: parts of Kyushu, especially Higo, Hiizen and Bungo; the whole of Shikoku; most of western Honshu, especially along the shores of the Inland Sea; Kaga in the north and Mutsu in the extreme northeast. These are in fact the areas (except Mutsu, perhaps) where the strongest domains were to be found. What is more, if we take separate percentages for the domains which were active in the Restoration movement, all located in the west and southwest, they work out as follows: Kōchi, 78%; Saga, 61%; Yamaguchi, Hiroshima and Kumamoto, all 56%.¹⁹ By contrast, the figure for Fukuoka, one of the great western domains which was relatively inactive in politics, was only 43%. However, the point cannot be regarded as fully substantiated. Kanazawa, largest of all the domains, had an ordinary revenue which was almost 62% of its *honda*ka. Yet it took little part in the events which led to the downfall of the Bakufu.

The low percentages are as important as the high ones, for they fall in and around the Kanto and Tokaido, areas where most of the land was held by the Tokugawa themselves or by *fudai*. The implication is that economic change had not only weakened the structure of feudalism generally. It had also shifted the balance of economic power away from the Tokugawa and their main supporters.

A comparison of the regional averages for *tozama* and *fudai* separately works out as follows (reading from southwest to northeast):

Tozama: 54.2, 59.5, 44.1, 33.4, 58.7
Fudai: 52.3, 60.0, 41.7, 38.9, 43.1

¹⁸ Tsuchiya Takao, *Hōken shakai hōkai katei no kenkyū* (Kyoto, 1927).

¹⁹ Reliable figures cannot be worked out for Kagoshima (Satsuma), but the following rough approximations may be of interest: *kusadaka* as percentage of *honda*ka, 112%; Samurai (excluding *sotsu*) per thousand *ko*ku, 281; Ordinary revenue as percentage of *kusadaka*, 34%. However, this figure for ordinary revenue excludes, among other items, the returns for the sugar crop, which is normally regarded as the mainstay of Satsuma finances.

It is only in the northeast that there is a marked disparity between the two sets of figures;²⁰ but when one considers that the great majority of *fudai* and Tokugawa lands lay in the regions where the norm was about 40%, while most of the larger *tozama* domains were in those where it was about 55%, it becomes obvious that there was a very great difference in terms of totals for the country as a whole. Percentages worked out from national aggregates are much closer to the averages for the southwest and northeast in the one case, for the central region in the other: *tozama*, 56.4%; *fudai*, 45.3%. Since the difference between these two figures probably reflects a difference in tax yield, one is forced to conclude that the new financial resources which economic growth had made available had been more successfully tapped by potential enemies of the regime than by its supporters. This seems to have been due to nothing more than the accident of geographical location. Yet, whatever the reason, the result was to make the Shogun weaker relatively in the nineteenth century than he had been in the seventeenth. This may well have been of more immediate political importance in the years just before the Meiji Restoration than the slower, if more far-reaching, changes which commerce was inducing in the class structure of Japan.

²⁰ This time the average for the northeast is not unduly distorted by the return for Kanazawa. Even if one excludes Kanazawa, the *tozama* average for the region is still 54.7%.

APPENDIX. LIST OF DOMAINS, SHOWING COMPARATIVE FIGURES FOR
PRODUCTIVITY, REVENUE AND FEUDAL POPULATION

REGION and Province	Serial No.	Domain: <i>tozama</i> (T) or <i>fudai</i> (F)*	<i>honda</i> ka in <i>ko</i> ku	<i>kusadaka</i> as % of <i>honda</i> ka (Graph A)	Total revenue as % of <i>kusadaka</i>	Ordinary revenue as % of <i>kusadaka</i> (Graph B)	No. of feudal class (<i>shisōsu</i>) per 1000 <i>ko</i> ku of <i>kusadaka</i> (Graph C) (viii)
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	
KYUSHU							
Hyūga	1	Obi (T)	51,080	118.6	40.00	38.18	207.9
"	2	Sadowara (T)	27,070	123.6	58.72	58.52	206.6
"	3	Takanabe (T)	27,000	222.2	27.00	25.15	158.7
"	4	Nobeoka (F)	70,000	116.9	35.33	34.22	75.1
Higo	5	Hitoyoshi (T)	22,100	286.9	39.21	38.76	288.5
"	6	Kumamoto (T)	540,000	145.6	48.41	38.78	137.0
Hizen	7	Shimabara (F)	70,000	107.0	59.76	55.30	87.4
"	8	Hirado (T)	71,700	168.6	43.40	42.28	126.6
"	9	Karatsu (F)	60,000	107.9	40.56	40.06	80.9
"	10	Ogi (T)	73,250	112.1	31.97	31.92	91.7
"	11	Saga (T)	357,000	203.0	30.22	30.05	92.9
Chikugo	12	Yanagawa (T)	119,600	129.9	52.92	42.58	94.7
"	13	Kurume (T)	210,000	174.4	32.21	32.02	45.5
Chikuzen	14	Akizuki (T)	50,000	103.6	40.17	37.37	85.8
"	15	Fukuoka (T)	520,000	109.8	39.35	39.26	57.4
Buzen	16	Kokura (F)	155,000	137.2	42.68	39.61	76.3
Bungo	17	Oka (T)	70,440	130.4	57.06	55.77	69.7
"	18	Saeki (T)	20,000	109.8	59.77	44.91	99.5
"	19	Funai (F)	21,200	124.6	53.59	52.66	88.3
"	20	Kizuki (F)	32,000	174.0	36.99	36.15	59.9
SHIKOKU and WEST HONSHU							
Iyo	21	Matsuyama (F)	150,000	104.8	70.46	65.83	90.9
"	22	Komatsu (T)	10,000	133.1	36.27	35.08	55.5
"	23	Saijō (F)	30,000	136.0	42.07	41.45	85.3
Tosa	24	Kōchi (T)	242,000	204.7	38.96	38.28	97.2
Sanuki	25	Tadotsu (T)	10,000	140.2	50.63	49.20	90.1
"	26	Marugame (T)	51,512	159.5	40.51	39.13	88.1
"	27	Takamatsu (F)	120,000	171.2	51.49	50.19	136.1
Awa	28	Tokushima (T)	257,900	171.7	46.61	45.82	69.2
Nagato	29	Toyoura (T)	50,000	248.1	32.22	25.52	69.8
"	30	Yamaguchi (T)	369,000	267.8	22.71	21.10	48.0
Suō	31	Tokuyama (T)	40,000	172.6	31.60	26.16	60.1
Aki	32	Hiroshima (T)	426,000	114.6	52.35	49.59	66.8
Bingo	33	Fukuyama (F)	110,000	102.5	49.63	46.09	82.0
Bitchū	34	Okada (T)	10,300	164.9	45.82	45.33	66.1
"	35	Ashimori (T)	25,000	123.6	32.85	32.75	31.7
Bizen	36	Okayama (T)	315,200	144.1	41.46	41.16	38.6
Harima	37	Tatsuno (F)	51,089	102.4	53.08	48.67	63.8
"	38	Anshi (F)	10,000	100.1	49.90	49.63	52.6
"	39	Hayashida (T)	10,000	148.9	43.13	43.12	63.9
"	40	Himeji (F)	150,000	140.8	42.06	41.40	40.8
"	41	Akashi (F)	80,000	112.9	48.13	47.88	55.7
Izumo	42	Matsue (F)	186,000	131.9	50.64	42.66	80.0
"	43	Hirose (F)	30,000	110.4	39.34	37.24	45.5
Mimasaka	44	Mashima (F)	23,000	134.0	38.73	34.23	41.2
Inaba	45	Tottori (T)	375,000	114.2	36.80	36.50	76.6
CENTRAL HONSHU							
Tajima	46	Toyooka (T)	15,000	105.4	38.15	36.60	50.2
"	47	Izushi (T)	30,000	109.4	46.13	44.48	84.8
Tango	48	Miyazu (F)	70,000	101.0	38.41	35.77	47.3
"	49	Maizuru (F)	35,000	102.6	59.47	58.85	66.3
Tamba	50	Sasayama (F)	60,000	113.7	53.23	45.29	53.1
"	51	Kameoka (F)	50,000	114.4	49.61	42.76	48.2
Settsu	52	Asada (T)	10,000	112.2	46.48	46.40	41.1
Izumi	53	Hakata (F)	13,500	105.7	42.55	42.00	40.2
"	54	Kishiwada (F)	53,000	111.4	55.54	49.30	78.0
Yamato	55	Takatori (F)	25,000	100.9	35.94	33.24	76.5
"	56	Shibamura (T)	10,000	100.2	52.00	50.68	61.1
"	57	Kōriyama (F)	151,288	101.1	38.90	35.48	40.9
"	58	Yagyū (F)	10,000	95.9	60.26	60.24	62.6
Ise	59	Tsu (T)	270,950	110.5	42.27	41.73	56.0
"	60	Kambe (F)	15,000	113.1	43.76	43.76	41.5

*Note: all *sanke* and *kamon* houses are here classified as *fudai*.

REGION and Province	Serial No.	Domain: <i>tozama</i> (T) or <i>fudai</i> (F)	<i>hondaka</i> in <i>koku</i>	<i>kusadaka</i> as % of <i>hondaka</i> (Graph A)	Total revenue as % of <i>kusadaka</i>	Ordinary revenue as % of <i>kusadaka</i> (Graph B)	No. of feudal class (<i>shi- sotsu</i>) per 1000 <i>koku</i> of <i>kusadaka</i> (Graph C)
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)
CENTRAL HONSHU							
(cont.)							
Ise	61	Komono (T)	11,000	112.6	46.21	43.00	46.1
Ōmi	62	Yamagami (F)	13,043	103.3	36.36	33.21	26.3
"	63	Hikone (F)	200,000	101.9	46.12	40.86	64.3
"	64	Zeze (F)	60,000	109.7	44.28	42.35	55.4
"	65	Ōmizo (T)	20,000	100.5	33.48	28.97	44.1
Wakasa	66	Obama (F)	93,558	113.9	51.86	48.82	58.3
Echizen	67	Mariyama (F)	10,000	112.8	44.07	42.67	28.1
"	68	Fukui (F)	320,000	105.1	33.53	32.54	36.1
"	69	Maruoka (T)	50,000	100.5	35.40	33.84	48.1
"	70	Katsuyama (F)	22,777	103.0	30.82	28.91	54.7
TOKAIDO and KANTO							
Owari	71	Nagoya (F)	619,500	137.7	37.61	34.53	57.8
"	72	Inuyama (F)	35,000	122.0	30.08	29.32	59.4
Mikawa	73	Nishio (F)	50,000	126.4	37.61	31.85	50.4
"	74	Okazaki (F)	50,000	121.0	35.28	32.85	51.9
"	75	Toyohashi (F)	70,000	128.5	28.37	28.12	36.0
Musashi	76	Mutsuura (F)	12,000	138.2	16.29	15.45	22.3
"	77	Iwatsuki (F)	23,000	143.6	26.88	26.04	52.5
"	78	Oshi (F)	100,000	141.8	27.67	25.54	38.6
Kōzuke	79	Annaka (F)	30,000	110.4	35.25	35.12	29.0
"	80	Takasaki (F)	82,000	110.5	38.15	37.88	44.9
"	81	Maebashi (F)	170,000	128.1	20.74	20.72	46.7
Shimōzuke	82	Ashikaga (F)	11,000	137.4	20.00	20.00	34.9
"	83	Utsunomiya (F)	70,850	128.9	20.54	18.15	44.8
Hitachi	84	Kasama (F)	80,000	106.6	29.53	28.86	38.2
"	85	Shishido (F)	10,000	105.0	16.15	16.03	25.6
"	86	Asō (T)	10,000	145.8	27.13	27.08	41.2
"	87	Yatabe (T)	16,039	174.1	14.25	14.01	24.3
Shimōsa	88	Koga (F)	80,000	126.6	25.39	25.34	39.8
"	89	Takaoka (F)	10,000	120.2	26.01	26.00	37.1
"	90	Tako (F)	12,000	118.1	22.27	19.57	35.3
"	91	Sakura (F)	110,000	120.9	37.69	35.77	56.4
Kazusa	92	Kikuma (F)	50,000	109.3	33.18	28.74	51.2
"	93	Tsurumai (F)	60,000	116.0	34.93	34.47	47.7
"	94	Kururi (T)	30,000	110.3	33.63	32.81	40.3
"	95	Iino (F)	20,000	105.3	35.59	34.02	39.9
NORTH and NORTHEAST							
Mino	96	Takasu (F)	30,000	100.5	21.55	20.57	81.3
"	97	Ōgaki (F)	100,000	131.1	39.84	38.95	43.9
Kaga	98	Daishōji (T)	80,000	104.7	31.79	31.57	50.4
"	99	Kanazawa (T)	1,022,700	132.3	47.09	46.85	41.2
Etchū	100	Toyama (T)	100,000	145.6	45.95	44.54	115.2
Shinano	101	Iida (T)	17,000	118.2	49.98	45.74	78.6
"	102	Matsumoto (F)	60,000	162.5	38.64	36.00	64.1
"	103	Komoro (F)	15,000	191.8	34.81	33.59	55.9
"	104	Ueda (F)	53,000	113.4	37.74	36.76	60.4
"	105	Matsushiro (T)	100,000	123.6	40.88	30.04	82.9
Echigo	106	Takada (F)	150,000	102.7	25.39	24.50	55.0
"	107	Shibata (T)	100,000	139.1	50.93	47.11	75.3
"	108	Kurokawa (F)	10,000	122.9	38.63	36.95	31.4
"	109	Murakami (F)	50,090	155.0	41.32	37.30	46.5
Uzen	110	Yonezawa (T)	147,000	193.7	22.22	18.62	134.3
"	111	Kaminoyama (F)	27,000	105.2	37.27	36.91	48.5
"	112	Shinjō (T)	68,200	151.7	24.47	24.44	40.0
Ugo	113	Matsumine (F)	22,500	119.1	40.38	36.39	40.1
"	114	Honjō (T)	22,021	123.6	48.75	45.35	98.0
Mutsu	115	Yunagaya (F)	14,000	108.7	21.74	21.40	28.8
"	116	Miharu (T)	50,000	123.5	20.38	18.22	44.1
"	117	Nakamura (F)	60,000	139.7	43.46	43.35	201.4
"	118	Ichinoseki (T)	27,000	149.4	29.21	29.03	69.6
"	119	Hachinoe (T)	20,000	200.4	22.89	17.91	99.0
"	120	Hirosaki (T)	100,000	274.5	51.75	47.67	82.6

