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Nobuko Okuda
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Gender and Family in Japan

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Preface

This book is the sixth volume in a monograph series being published by the Socio-Economic History Society, Japan, and Springer. It contains four articles on gender, the family and the household in Japan in relation to economic development over a time span ranging from the Tokugawa period (1603–1868) to the 1930s, along with four reviews of recent books about gender studies. All the pieces were originally published in the Society's journal and written in Japanese. Some revisions have been made to the English versions in order to make them accessible to an international readership.

There have been many inspiring contributions to econometric history by Japanese scholars, largely as a result of research into historical demography. In the 1960s, Akira Hayami started to analyse population trends by applying statistical methods to his studies of registers of population in Tokugawa Japan. Since then, historical demography in Japan has developed by combining its insights into population trends with research into other economic phenomena including agricultural development, urbanization, changes in living standards and public health. Their contributions have revolutionized our understanding of the history of early modern and modern Japan. Although economic historians might not make explicit references to the concept of gender, females as well as males, and female health, standards of living and, above all, the position of women in the family have naturally become targets of analysis during research into demographic and anthropometric issues. Because of the importance of Japanese textile exports from the 1870s up to the beginning of the Second World War, economic historians have also focussed on the role of women as factory workers in the textile industry.

Women's history in Japan, on the other hand, has a long history. Yet for a long time, it was conducted mainly by non-professional historians outside academic circles. It was only in the 1980s that professional historians started to recognize its importance. The publication of the Japanese translation of Joan Scott's *Gender and the Politics of History* in 1989 was a particularly important marker in this respect. Two topics that have drawn special interest are closely related to economic and demographic history. These are women's work and the status of women in the family throughout their life course, including issues related to reproduction, and

child-rearing practices such as infanticide (*mabiki*). Gender historians have assumed that the family in early modern and modern Japan was a stem family and related this to women's low status. A stem family household is recognized as a unit of farming and other economic activities, of everyday life and of reproduction by historians. A woman's life, work and reproduction were, therefore, determined by her household (ie), and the household head. In other words, historians have thought that a woman's position in the *ie* was crucial to her well-being. Until after the Second World War, Japan was very much a patriarchal society. Specialists in women's history have, therefore, taken patriarchy as a prerequisite in their research and place emphasis on the fact that in early modern and modern Japan, the basic unit of society was the stem family.

Although the two fields share so many research interests, economic history and gender history in Japan have not experienced enough cross-fertilization. This is partly because gender history is a relatively new discipline. The four articles in this volume have therefore been selected in order to show the possibilities of closer collaboration. They present nuanced and sometimes contradictory pictures of women in early modern and modern Japan and the households to which they belonged.

The first two chapters focus on labour migration in the Tokugawa and interwar periods, respectively. The third and fourth articles look at different ways in which economic development affected women's work and their standards of living in the 1920s and 30s.

Chapter 1, by Miyuki Takahashi, examines labour migration to Kōriyama, a town in north-eastern Japan, from villages in its vicinity. During the Tokugawa period, it acted as a stopping point along a major highway. The migrants were different from the life cycle servants found in Europe. She points out that 19% of female and 6% of male migrants were married couples who went into service in the same household. In those cases, wives would return to their own households for childbirth. Therefore, the migration of married women did not necessarily reduce fertility. Towards the end of the Tokugawa period, merchants in Kōriyama started to employ day labourers instead of labourers who lived on site. Migrants, therefore, started to settle in the town. That resulted in population growth for the town and almost certainly women's lives, as well as men's live, in the town had changed.

Chapter 2, by Masahiro Ogiyama, looks at the labour supply of young women in an underdeveloped area in Akita Prefecture, in the northern part of Japan's main island, in the early decades of the twentieth century. Before the First World War, there was an unlimited female labour supply, so that local employers were able to pay very low wages to the young women whom they hired to work as domestic servants. After the war, however, agricultural development and an increase in rice yields meant that farming households could afford to keep their daughters at home to work on the farm instead of sending them into service. Both local employers and a textile factory that drew its female workers from Akita had to offer higher wages in order to attract them. This chapter shows the extent of the regional differences in Japan in the early twentieth century. Ogiyama pointed out that developed regions

had experienced limited female labour supply in the 1890s. This case study shows different regions took different paths to the modern labour market.

In Chap. 3, Kazunori Murakoshi focusses on the decreased growth in height and weight of infants in rural areas in Taishō Japan (1910–1925) and relates this to women's agricultural labour. He demonstrates that the heavy workload of lactating mothers in rural areas led to diminished milk production, which in turn resulted in the malnutrition of their infants. His article has important implications for both economic and gender history. When the labour-intensive nature of agricultural development in Japan meant more work for women, this affected younger married women, primarily the wives (*yome*) of the eldest sons of the stem families. Gender historians have shown that the senior woman in such a family, the wife of the household head, would normally only allow the *yome* to rest for a couple of days after giving birth before she was sent back to work in the fields. Murakoshi's findings provide supporting evidence of the patriarchal nature of the modern Japanese family and show that the power relations in the *ie*, which worked through hierarchical relations involving gender and seniority had a negative effect on babies' health and physical development.

By contrast, Chap. 4 focusses on the rising living standards of women during the same period. The author, Ken'ichi Tomobe, an anthropometric historian, emphasizes the need to focus on the living standards of individual household members rather than on the whole household as a unit. His advice is particularly applicable to the case of women. His finding of a lower mean age of menarche in schoolgirls and young women textile workers suggests a better standard of living for them in the 1920s and 1930s. Tomobe also points out that the peak in the height velocities of both girls and boys was recorded in the 1920s. There were no significant differences between brothers and sisters in the same family. The implication is that daughters, as well as sons, had benefitted from the rising standard of living in interwar Japan. As a result, his research questions the conventional view of women's subservient status during this period.

The four reviews are evaluations of recent books on gender and family. Chapter 5 examines a book on marriage, divorce and remarriage in early modern and modern Japan. It also discusses the methods that Japanese scholars use when analysing family history. Chapter 6 focusses on gender in relation to the building of a modern Japanese nation in the period from the Meiji Restoration of 1868 up until the end of the Second World War. Gender historians agree that this period was curial time in Japanese gender history because the changes included a dramatic reconstruction of ideology of gender. Chapter 7 reviews a volume of articles on the relationship between economic activity and consumption that is part of a series on gender studies. The content is not limited to studies of Japan, and the review provides insight into the research interests of Japanese historians. Chapter 8 looks at a collection of articles on the gender history of European countries written by Japanese scholars. They show how the research of Japanese scholars into gender history is ranging beyond Japan and adapting the concept of gender to the study of a wide variety of historical contexts.

Finally, we would like to thank Prof. Helen Ballhatchet, who translated Chaps. 1, 3 and 7 and helped to revise the Preface and Chap. 8, and Ms. Louisa Rubinfien, who helped to revise Chaps. 2 and 4, and translated Chaps. 5 and 6.

Sapporo, Japan — Tetsuhiko Takai
Nagoya, Japan — Nobuko Okuda

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Teika ni ataeta Eiyō Sesshu no Kaizen Taisaku no Eikyō: 1930-nendai no Nōson o taishō to shita Kentō' (Influence of improvements in nutrition on the decline of the infant mortality rate: a study of infants in Japanese rural areas in the 1930s) in *Shakai Keizai Shigaku* (Socio-Economic History), 83(2) (2017).

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Part I
Perspective on the History of Women and Family in Japanese Economic Development

Chapter 1
The Labour Market and Labour Migration in Small Post Towns in Early Modern Japan: The Relationship Between a Town and Its Outlying Villages in the Northeastern Domain of Nihonmatsu in the Eighteenth to Nineteenth Centuries

Miyuki Takahashi

Abstract The purposes of this paper are to investigate the role of medium-sized towns in the labour market of Tokugawa Japan (1603–1867), with respect to both supply and demand, and to consider the factors determining labour migration to towns from the farming villages surrounding them. Kōriyama was the political and economic centre of the County of Asaka in northeastern Japan, and thus it enjoyed a high volume of both traffic and regional trade during the Tokugawa era. The town played a significant role in absorbing surplus labour from the 41 outlying villages that together comprised Asaka. Labour migration to Kōriyama fell into two categories: *meshimori onna* (young women who served food and in many cases acted as sex workers); and men and women from the County of Asaka who worked in households or household businesses as *hōkō* labour for renewable periods of one year. Migration of *hōkō* labour to Kōriyama was determined by proximity to the town, and by the economic condition of the village of out migration. As time went by and Kōriyama's economic importance grew, large-scale merchants came to prefer day labour to *hōkō* labour. This reduced short-term *hōkō* migration to Kōriyama and encouraged permanent relocation, becoming a major factor in the town's increase in population.

Keywords Town · Migration · Labour · Population

This chapter is a translation of an article that originally appeared in *Shakai Keizai Shigaku* 65 (6) (March 2000), pp. 43–62.

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1.1 Introduction

Recently there have been some valuable studies of medium- and small-sized towns in early modern Japan, but more are needed. The purpose of this chapter is to explore how small post towns functioned as labour markets for the surrounding area, and to analyse the changes that occurred.

Kōriyama was a small post town that served as an official stopping point on the Ōshū-Matsumae Highway, a major road that ran northwards from Edo, the enormous city that was the administrative capital of Tokugawa Japan. It was the economic and political centre of the County of Asaka, and steadily gained in population during the period 1709–1872 even though the surrounding villages were experiencing stagnation, or even decline. One of the keys to Kōriyama's population growth was its prosperity, which caused a high demand for labour and sucked up excess workers from nearby villages.

In order to examine Kōriyama's role as a regional labour market, it is first necessary to construct the labour supply model that determined the extent of labour migration from villages in Asaka. The evidence for this will come from the *ninbetsu aratamechō* (census registers by household, hereafter called NAC) of the town, which have survived for over 100 years. NAC of two villages (Ōtsuki and Shimomoriya) will be used to fine-tune the model and confirm the migration patterns. In the case of Ōtsuki, the principal village of the Ōtsuki *kumi* (administrative grouping of villages), the focus will be on both in and out migration. In the case of Shimomoriya, a small village at the foot of a mountain range, the focus will be on migration to Kōriyama.

The second topic is the change in labour patterns that led to a decrease in labour migration within Asaka from the eighteenth to nineteenth centuries. The focus will be on the demand side, in other words the role of large-scale merchants in Kōriyama who employed many *hōkō* labourers. In the eighteenth century, many villagers from the area surrounding Kōriyama came to the town as *hōkōnin*, that is as servants or other types of labourers who lived on site in the households/household businesses where they worked. Their numbers were determined by two factors: the economic situation the village of out migration, and its proximity to Kōriyama. In the nineteenth century, however, the records show a decrease in labour migration. This was due to a change in the pattern of employment. Many people were living in the town with their own families rather than in the household of an employer, travelling to and from the employer's household, or to and from their place of work. In some cases, the contract between employer and employee was for one day only (*hiyatoi*). Saito has also observed a similar change in Edo, where many workers shifted from living on site to living in separate premises and travelling to work. In Kōriyama, the result of this shift was an increase in population, since whole families came to live and work in the town permanently.

The main aims of this chapter are first, to clarify the role of medium and small towns surrounded by farming villages, and second, to contribute to research into both the history of towns in the early-modern period, and migration as an aspect of historical demography.

1.2 Sources and the Area Chosen for Research

Although migration is an important social phenomenon and the field of historical demography has existed for well over fifty years, the topic has not received wide coverage. This is because of a lack of historical evidence. In countries with a Christian background, parish registers are a major historical source for information about the dates of birth (baptisms), deaths (burials), and marriages. However, this information does not provide reliable evidence of either migration or the total population of a particular area.

In Japan, the main records used to study historical demography are NAC (mentioned above) and *shumon aratamechō* (registers of religious affiliation by household, hereafter called SAC).[1] They are more suited to the study of migration in an early modern society than any other records in the world, even though accurate dates for births, deaths, marriages or in and out migration are not given. Instead, they provide details of the resident population in every household of a village or town (the size of the target population), and some of them also give information by both gender and age of in and out migrants and where they went or came from.

By virtue of these unparalleled sources, it has been possible for researchers to disprove the theory that people in early-modern Japan were tied to one place and never moved (Hayami 1978; Kawaguchi 1983, 1984a, b; Hamano 1998). However, additional sources are needed for information about wages. Care must also be exercised in interpreting NAC. They were usually created only once a year, so the records reveal the situation at that point and no other. This means that would be no record of the movements of *hōkō* labourers who worked for less than one year if they were not working on the day when the record was compiled.

In this chapter, the following records are used: the NAC for Kōriyama from 1709 to 1870 (with the exception of 30 missing years), the NAC for Shimomoriya from 1708 to 1872 (with the exception of 15 missing years), and the NAC for Ōtsuki from 1796 to 1871 (with the exception of 27 missing years). Since these NAC give the resident (de facto) population, precise information about migration is available, such as changes in employment made by *hōkō* labourers. Since the records give details of the population of the same area over long periods of time, the fortunate researcher is able to build accurate pictures of local labour markets.

The area chosen for research is the County of Asaka in Nihonmatsu domain, located in present-day Fukushima prefecture, in the northeastern part of Japan's main island. The NAC of Kōriyama, Ōtsuki and Shimomoriya will be used to clarify how villagers migrated to Kōriyama as *hōkō* labourers.

From 1643 until 1867 Nihonmatsu domain was ruled by members of the Niwa family. It was divided into two counties (*gun*), Adachi and Asaka, the latter comprising 41 villages and one town (Fig. 1.1). For administrative purposes, these were further divided into three *kumi*: Kōriyama (comprising Kōriyama and 13 villages), Katahira (11 villages), and Ōtsuki (17 villages). Five villages of Ōtsuki *kumi* on the

[1] For information about the historical background to these registers, see Hayami (1979).

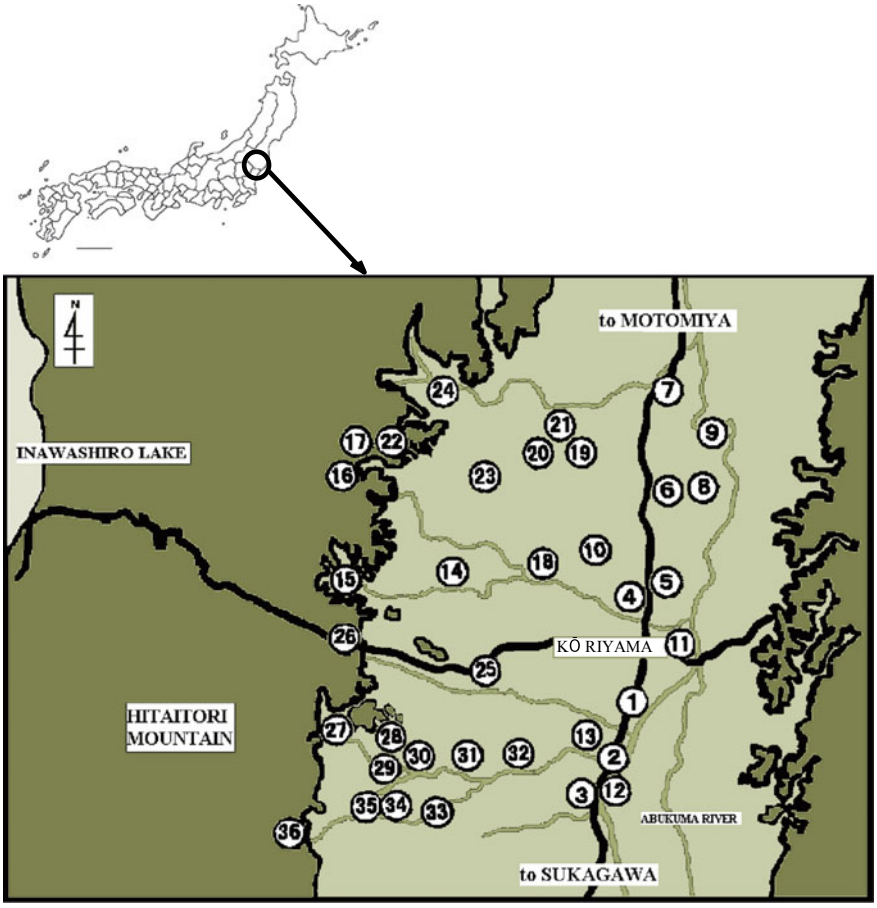

Fig. 1.1 Villages in Asaka county (excluding 5 villages nearby Inawashiro Lake). 1–13, Kōriyama *kumi*; 14–24, Katahira *kumi*; 25–36, Ōtsuki *kumi*. 1 Koharada, 2 Hideyama, 3 Sasagawa, 4 Kubota, 5 Fukuhara, 6 Hiwada, 7 Takakura, 8 Hatchchō me, 9 Umezawa, 10 Yatsuyamada, 11 Yokozuka, 12 Sasahara, 13 Arai, 14 Katahira, 15 Kōzu, 16 Natsuide, 17 Nagahashi, 18 Tomita, 19 Wasehara, 20 Horinouchi, 21 Maedasawa, 22 Kamiizushima, 23 Shimoizushima, 24 Akogashima, 25 Ōya, 26 Tadano, 27 Yamaguchi, 28 Ōtani, 29 Yawata, 30 Komaya, 31 Kawada, 32 Narita, 33 Nodashinden, 34 Nabeyama, 35 Tomioka, 36 Shimomoriya

shores of Lake Inawashiro have been omitted from this study because in 1833 they were transferred to the central government of the Tokugawa and came under the authority of Aizu domain.

The domain appointed an official to administer each *kumi* from offices located in Kōriyama. The town was also the location of the storehouses where each *kumi* kept the rice that it had to pay as tax. Markets called *rokusai-ichi* were held there six times a month. Many people from the surrounding villages came to the town to amuse themselves while buying daily necessities, and enjoy a change of scene

(Abe 1981). In all these ways, Kōriyama functioned as the political and economic centre of Asaka. At the beginning of the early-modern period it was classed as a "village (*mura*)", but merchants appealed to the domain for it to be upgraded to a "town (*machi*)", on the grounds that it was "not appropriate for villagers to be engaged in business". Their appeal was accepted, and in 1824 both Kōriyama and the main village of Adachi, Motomiya, were officially recognised as towns (Watanabe 1999).

Kōriyama was divided into two areas, Kamimachi to the south and Shimomachi to the north. Each part had its own headman (*nanushi*), whose responsibilities included maintaining the NAC for their area. In some of the NAC for Shimomachi there are gaps even in the records for the same year, making it difficult to trace the long-term movements of individuals. For this reason, only the NAC for Kamimachi have been used. Accordingly, all further references to Kōriyama in this chapter will be based on the evidence for Kamimachi alone.

As Fig. 1.2 shows, the demographic trend of Kōriyama was very different from those of the rest of Asaka. The population increased steadily throughout the period under study, from 796 inhabitants in 1709 to 2612 in 1870, the only exceptions to this being slight falls during the famines of Tenmei (1771–1789) and Tenpō (1833–1836).

Ōtsuki was at the centre of the 17 villages of Ōtsuki *kumi*; like Kōriyama, it was divided into two areas called Kamimachi and Shimomachi that had separately maintained NAC. This study uses the NAC for Kamimachi. In 1796 Ōtsuki Kamimachi had 790 inhabitants, after which the population decreased. This trend was reversed in 1840, to the extent that in 1860 there was a return to the level of 1796. In 1868 the

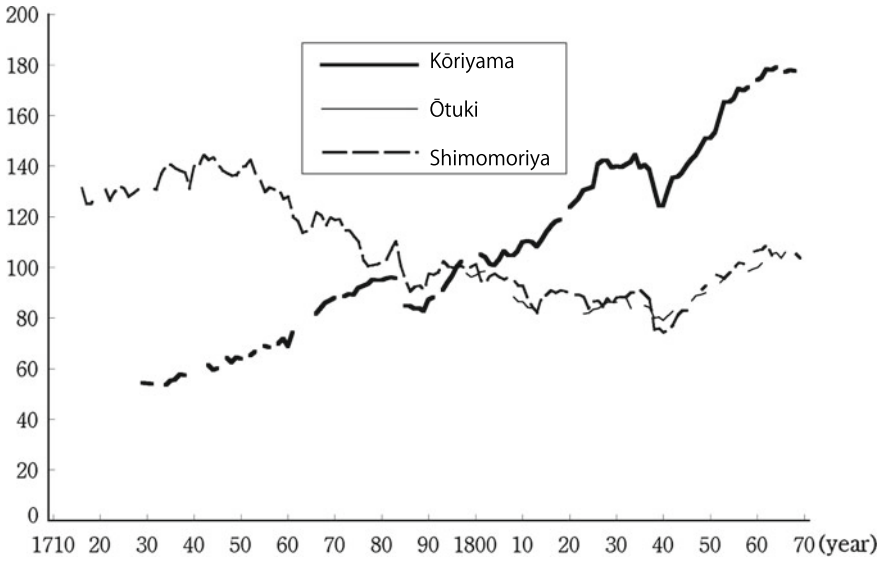

Fig. 1.2 Demographic trends in Kōriyama and two villages in Asaka county (1796 = 100). *Sources* Kōriyama and Shimomoriya: NAC data, Ōtsuki: Sagara (1989). Actual numbers in 1796: Kōriyama = 1464; Ōtsuki = 790; Shimomoriya = 422

population stood at 845. Shimomoriya, at the foot of the Ōu range of mountains, also belonged to Ōtsuki *kumi*. In 1716 the population numbered 422, but in the second half of the eighteenth century it began to decrease. While there was a slight recovery later, numbers never returned to the level of 1716. In 1869 there were 332 inhabitants.

1.3 Labour Migration and the Practice of *Hōkō*

Hōkō is a noun that normally refers to the employment of people who live at their place of work. There has been a lot of research into the *hōkō* labour practices of samurai households and large-scale merchant houses. During the Tokugawa period of early-modern Japan (1603–1867), movement was strictly controlled. If villagers wished to migrate out of a village, they had to tell the official headman where they were going and how long they would be away. One reason for this was the tax system. In early modern Japan, taxes were calculated according to the estimated yield of an area in rice or other products (the *kokudaka* system). The tax payable by a village (*murauke*) corresponded to the amount of rice (and/or other products) that it was meant to harvest (*muradaka*). As a result, village officials and local authorities showed close interest in the number of villagers who were available to work in the fields.

Patterns of labour did not remain the same throughout the Tokugawa period. Many scholars are of the opinion that there was a gradual change from indefinite debt bondage (*shichimotsu hōkō*), which was dominant in the early Tokugawa period,[2] via an intermediate pattern of fixed-term debt bondage (*igeshishichi hōkō*), to wage labour (*kyūtori hōkō*) (Fujita 1971). However, Nagata (1998) used the NAC of Shimomoriya and Niita, a village in the other Nihonmatsu County of Adachi, to argue that this was not always the case. There is also a theory that *hōkō* was a temporary phase in the life of a villager, and that they all returned to their villages of out migration (Araki 1959).

Saito (2002) draws a distinction between the patterns of *hōkō* in Osaka, the commercial capital of Tokugawa Japan, and other places, including Edo. In the former, large-scale merchant houses required labourers to become apprentices from a very young age, so that periods spent in *hōkō* labour grew longer. In the latter, however, *hōkō* was replaced by short-term employment, such as day labour. As one of the psychological factors in the disappearance of *hōkō* labour, he gives the fact that day labourers did not live in other people's households but could marry at the average age for the time and have children of their own. Saito focussed mainly on the two largest cities of the Tokugawa period, Edo and Osaka. However, if there were no differences between the *hōkō* labourers in a post town such as Kōriyama and those in Edo, it would not be surprising if labour patterns changed in a similar way, and in fact it seems as if they actually did.

[2]Before that, there were forms of hereditary servitude (*fudai hōkō*).

Studies of labour migration in pre-modern Japan include case studies by Matsuura (1973, 1981) of the villages of Hanakuma in the County of Yatabe in the province of Settsu (which also included Osaka) and Ōta in the County of Shiki in the neighbouring province of Kawachi. Hanakuma is of great interest because, in Matsuura's view, it acted as an intermediate stepping stone for migrants moving from small villages to big cities. Hayami (1992) has shown that in the village of Nishijō in the County of Anpachi in Mino province (central Japan), 50.3% of males and 62.0% of females had experience of *hōkō*. Narimatsu (1985, 1992) has also observed that the lives of many inhabitants of Shimomoriya (Asaka County) and Niita (Adachi County) included a period when they were engaged in this type of labour.

On the other hand, Nagata (1998) has pointed out that although *hōkō* was a widespread form of labour in pre-modern Japan, regional differences existed. In Mizoguchi (1981) analysis of the records of twenty-five villages in the province of Ka'i in central Japan, he identified the following explanatory variables for labour migration: (1) the economic state of the households of both out and in migration, regardless of whether migration was within the same village or to a different place; (2) the distance that migrants had to travel; (3) village land use, in other words, wet field (rice) or dry field cultivation; and (4) the geographical relationship between villages, since this decided the direction of migration. Finally, as Hidemura (1961) has shown in his study of northern Kyūshū, there are also cases where *kumi* membership has played a role in determining *hōkō* migration. All these points have influenced the way in which this chapter approaches the evidence for migration in Asaka.

In this chapter, records concerning Kōriyama, a post town, and the villages in the same county will be used to clarify (a) how post towns attracted labour from outside, and (b) the nature of the *hōkō* labour market and *hōkō* labour migration within the same county at a time when there were strict controls on the freedom of movement.

From the point of view of historical demography, there is such a strong relationship between marriage and the timing of *hōkō* out migration that it has an effect on the natural increase of population. For example, there is no doubt that in the case of Nihonmatsu domain, the tendency of the inhabitants of Shimomoriya and Niita to migrate after marriage caused a decrease in the legitimate birth rate. However, while it is clear that there was a close correlation between the timing of *hōkō* migration and a number of variables related to population, out migration of *hōkō* labourers did not always lead to a decline in legitimate births. In fact, the Ōtsuki NAC include examples of wives of married couples who had gone to work in the same household becoming pregnant and going back to the houses of their in-laws in order to give birth. It is likely that their behaviour was linked to the domain's practice of paying a child care allowance to women who gave birth while engaged in *hōkō* labour (Takahashi 1998).

In Nihonmatsu, there was a slight difference between patterns of *hōkō* migration and migration as a result of marriage or adoption. For example, there was hardly any *hōkō* migration into the domain from anywhere other than Echigo, a neighbouring province. But as has already been observed in the case of Shimomoriya (Narimatsu 1985), people did migrate from other domains in neighbouring areas if the purpose

was marriage or adoption.[3] Of course, movement as a result of marriage or adoption could be a way of satisfying a demand for labour. In other words, focus on *hōkō* migration alone will not necessarily give an accurate picture of the movement of labour in an area. Indeed, since it was difficult to work outside one's domain, it is highly likely that even if people were migrating for work reasons, they might avoid giving this as their reason (Honma 1963). Therefore, in order to use the information given in NAC to draw the full picture of a labour market, it may be necessary to include categories in the records such as "permanent relocation of residence (*hikkoshi*), "temporary relocation through renting a room or rooms (*tanagari*)", "becoming a lodger (*yakkai*)", and even "absconding (*kakeochi*)" in addition to marriage and adoption.

1.4 Labour Migration in the County of Asaka: The Supply Side

1.4.1 Labour Migration to Kōriyama

The purpose of this section is to investigate the push factors in migration to Kōriyama from villages in Asaka. The investigation is limited to Asaka because there was hardly any migration to Kōriyama from areas other than Echigo province, which was a source of female debt-bonded *hōkō* labourers known as *meshimori onna* who were employed at inns where the Ōshū Highway passed through the town. The basic meaning of *meshimori onna* is "girl who serves food", but many of them were also sex workers. For some reason, *hōkō* migration from the County of Adachi, the other part of Nihonmatsu domain, was also negligible. This limitation cannot be explained by provisions against working in other domains.

Thirty-five of the 41 Asaka villages are included in this analysis. As was explained above, the five villages on the shores of Lake Inawashiro are excluded because they were removed from the authority of Nihonmatsu in 1833. Another village was omitted because of its small size. Kōriyama NAC for the period 1729–1870 were used to ascertain in migration. Instead of using the population as it was recorded each year, the appearance of individuals in the documents was counted only once. For example, both those who continued to work without returning to the village of out migration for ten years and those who stayed for just over one year were all treated the same, and counted only once. This was because the object was to ascertain the flow aspect of in migration.

Stocks of migrants were also examined (Figs. 1.3 and 1.4) in order to supplement this information. There was no standard period for migrants to remain in Kōriyama. After a peak in the size of the stock of labour migrants in 1826, there was a gradual decline.

[3] In 1655 Nihonmatsu issued a provision against debt bondage-type *hōkō* migration outside the domain. This explains why there was hardly any out migration from Nihonmatsu (Kōriyamashi 1972).

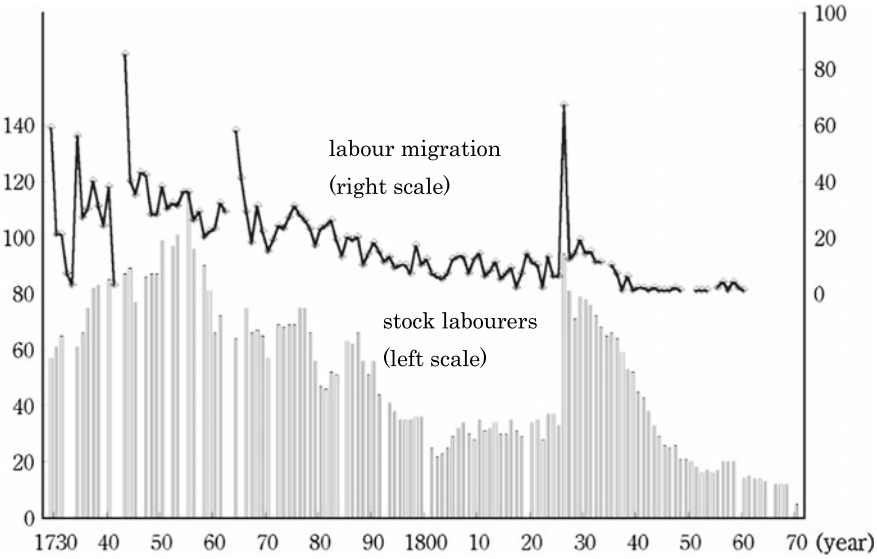

Fig. 1.3 Labour migration from villages in the County of Asaka to Kōriyama (male) *Source* Kōriyama Kamimachi NAC (1729–1870). Stock labourers are people listed as *hōko* labourers on NAC

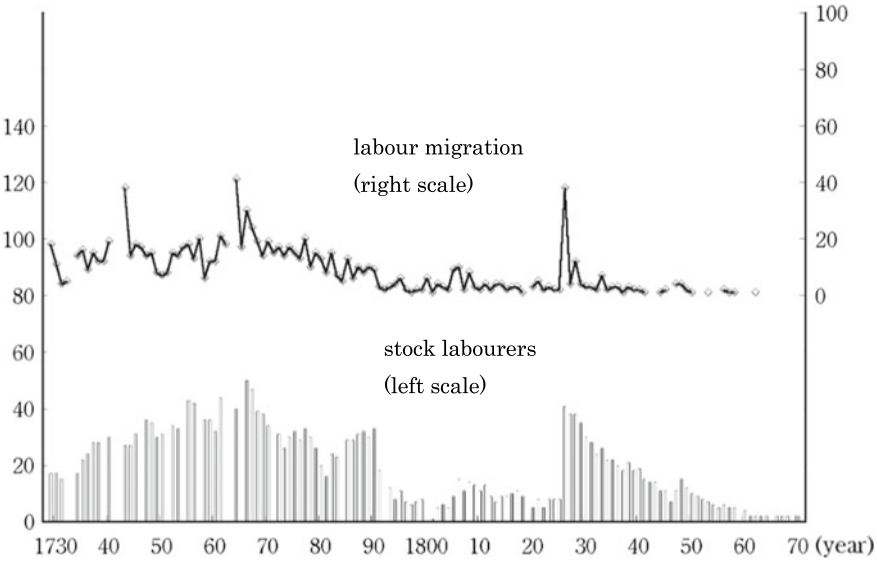

Fig. 1.4 Labour migration from villages in the County of Asaka to Kōriyama (female) *Source* Kōriyama Kamimachi NAC (1729–1870). Stock labourers are people listed as *hōko* labourers on NAC

There are 3006 individual cases of migrants arriving in Kōriyama from other parts of Asaka in the period 1729–1870.[4] The major sources of migrants were nearby villages, such as Kubota (395) and Koharada (443), and the central villages of a *kumi*, such as Ōtsuki (174) and Katahira (287).

It seems likely that villages suffering from a low internal labour demand would experience higher levels of out migration, and that proximity to Kōriyama would also be a factor. Further, since Asaka was divided into three *kumi*, it can also be inferred that people in smaller villages in a *kumi* would flow to the central village, and that people in the central village would flow to Kōriyama as the economic and political capital of the county. This assumption can be tested by using the explanatory variables that are listed below.

(1) The economic situation in the village of out migration

   (a) Economic indicator expressed as the annual yield from the village in rice or other crops (*muradaka*) divided by the number of households[5]
   (b) The yearly tax rate as established by the domain (*menritsu*) (It was posited that villages with higher tax rates would be wealthier) (*Sources* Nihonmatsushi 1982; Kōriyamashi 1971)

(2) Geographical factors

   (a) Distance from the village of out migration to Kōriyama
   (b) Location within the *kumi* (central village/not central village)

(3) Institutional factors

   (a) *Kumi* membership (Since this signifies alignment within the county, it was posited that migration within the same *kumi* was more likely than migration to another *kumi*).

These variables were examined in order to find their relative importance in determining the number of labour migrants to Kōriyama. Table 1.1 gives the single correlations between each variable. The most important explanatory variable for the number of migrants was proximity. The nearer a village was to Kōriyama, the greater the flow of labour. By contrast, there was a negative correlation between high tax rates and labour out migration. Despite this, there was a positive correlation between the annual yield of a village (the *muradaka*) divided by households and out migration to Kōriyama, which seemed counter intuitive. It was originally assumed that this variable was an indicator of the wealth of a village, and that if a village was rich enough to support its inhabitants, there would be a decrease in out migration.

The reason for the unexpected result was the relationship between variables 1-a and 1-b. The correlation between 1-a and 1-b was strongly negative, at −0.63. The tax rate of a village (1-b) indicates its economic strength, and it is therefore not surprising

[4]This section uses the Xavier Data for Kōriyama compiled by Professor Hayami, which has a starting date of 1729.

[5]Nihonmatsushi (1982).

Table 1.1 The explanatory variables of labour migrants to Kōriyama

Correlation matrix	Distance to Kōriyama (km)	*Muradaka*/Number of households	Tax rates	Centre of group or not	Same group or not	Number of labour in—migrants/Number of households
Correlations between two variables						
Distance to Kōriyama (km)	1.00	–	–	–	–	–
Muradaka/Number of households	−0.30	1.00	–	–	–	–
Tax rates	−0.02	−0.63	1.00	–	–	–
Centre of group or not	−0.10	0.28	0.10	1.00	–	–
Same group or not	−0.70	0.11	−0.02	−0.18	1.00	–
Number of labour in—migrants/Number of households	−0.59	0.45	−0.27	−0.03	0.48	1.00
Outline of variables						
Total	258.08	309.35	162.10	2.00	12.00	25.47
Average	7.37	8.84	4.63	0.06	0.34	0.73
Standard deviation	3.19	2.01	1.37	0.23	0.47	0.75
Number	35	35	35	35	35	35

Source Muradaka, number of households, group and tax rate are in "*Nihonmatsushi-shi*", Vol. 6, 1982, pp. 873–874. I scaled the distance from a 1/50,000 topographical map of Kōriyama. The numbers of labour migrants are from NAC data of Kōriyama. I use dummy variables for being same group or not and being the centre of a group or not (Kōriyama group = 1, Non Kōriyama group = 0. The centre of a group = 1, Not the centre of a group = 0)

that higher tax rates were linked to lower levels of labour out migration. However, the correlation between 1-a and 1-b was such that high rates of 1-b corresponded to low rates of 1-a. As a result, when 1-a was low, there was a decrease in labour out migration. One possible reason for the close correlation between 1-a and 1-b is the desire of the domain government to maintain a steady supply of revenue. When harvests were bad, for example in times of famine, the domain would be compelled to meet peasants' demands for a recalibration of annual yields. When income from agricultural land fell as a result of such recalibrations, the domain may have increased the tax rate as a way of supplementing its losses, leading to the phenomenon of villages with a relatively high tax rate despite a relatively low estimated yield.

Regression analysis of the explanatory variables was then used to make two models of the population pull factor from Kōriyama, as follows:

Variables:

Y The number of labour migrants from the village divided by the number of households in the village
D The distance from the village of out migration to Kōriyama (2-a)
T The tax rate (*menritsu*: 1-b)
C Location of the village in the *kumi* (central village/not central village)
G *Kumi* membership of the village (Kōriyama *kumi*/another *kumi*)

(Model 1)

$$\underset{}{Y} = \underset{}{2.46} + \underset{(0.000^{**})}{(-0.14)} \times D + \underset{(0.000^{**})}{(-0.15)} \times T \qquad \underset{(0.045^{*})}{} \left(R^2 = 0.43,\ N = 35\right)$$

(Model 2)

$$\underset{}{Y} = \underset{}{2.30} + \underset{(0.000^{**})}{(-0.13)} \times D + \underset{(0.012^{*})}{(-0.15)} \times T + \underset{(0.057)}{(-0.12)} \times C + \underset{(0.807)}{(0.14)} \times G \qquad \underset{(0.666)}{} \left(R^2 = 0.44,\ N = 35\right)$$

($** = 1\%$ Level of significance, $* = 5\%$ Level of significance)

In both models, there is a negative correlation between the values of T and Y. This is the same result as that for the single correlation analysis explained previously. Higher values of T signify better economic situations; accordingly, high T values coincide with decreasing levels of out migration. Distance (D) also plays an important role in determining out migration from a village. Koharada, the nearest village to the south, and Kubota, the nearest village to the north, sent particularly high levels of *hōkō* labourers to Kōriyama. On the other hand, variations C and G were not important. The value of C—whether or not a village was situated at the centre of a *kumi*—turned out to have no role as an explanatory variable. This means that all the villages shared a similar status, with Kōriyama as the only true central point

in Asaka. Similarly, G—whether a village belonged to Kōriyama or to a different *kumi*—was of no significance either (Fig. 1.5).

As long as a village was in the County of Asaka, there was no correlation between *kumi* membership and levels of out migration. As was mentioned before, the administrative offices for each *kumi* in Asaka were located in Kōriyama, which in itself suggests that *kumi* boundaries were not of great importance. Moreover, officials themselves were moved to other *kumi* after a few years, and it was not unheard of for an official formerly in charge of Kōriyama *kumi* to be placed in charge of Ōtsuki *kumi*, and vice versa (Obara 1984).

The number of migrants from a village increased according to its proximity to Kōriyama and decreased according to its level of economic prosperity (as measured by its tax rate). However, in the case of several villages, including Shimomoriya, the two models do not sufficiently explain the number of *hōkō* migrants to Kōriyama. Since the value of labour migration from Shimomoriya is 0.94 (people per household) greater than the models would suggest, there must be other variables at work. Since the units of these models are based on individual villages, it is not possible to include factors at a micro level such as the economic states within particular households that encourage individuals to seek work elsewhere. An alternative ploy was to use the NAC of Ōtsuki and Shimomoriya to identify migrants to Kōriyama at the point of out migration.

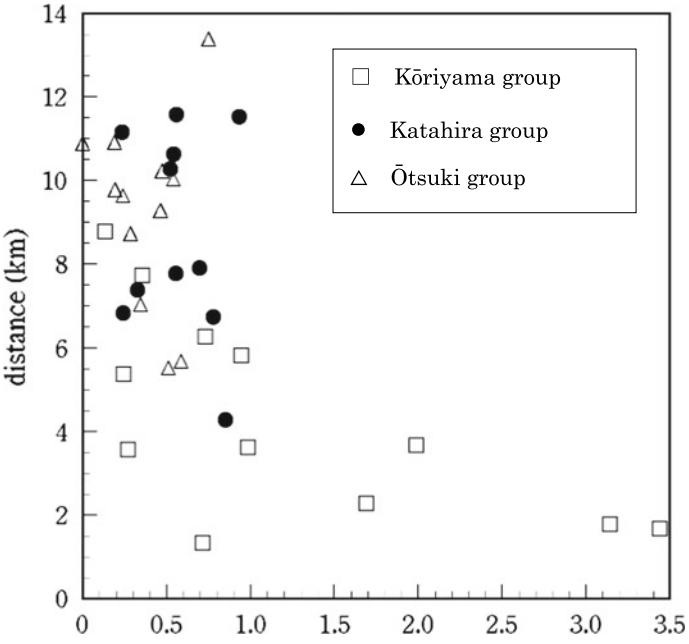

Fig. 1.5 The relationship between D (the distance of a village from Kōriyama) and Y (the number of labour migrants to Kōriyama/number of households in the village) Number of labour migrants/the number of households. *Source* Kōriyama Kamimachi NAC (1729–1870)

1.4.2 Labour Migration from Ōtsuki

In the previous section, five factors were examined to see the extent to which they functioned as determinants in the flow of migration to Kōriyama. The factors were: the estimated crop yield of a village divided by the number of households, proximity to Kōriyama, the tax rate of a village, *kumi* membership, and location within a *kumi*. Model 1 showed that proximity to Kōriyama and tax rates were the most important factors. In this section, the NAC of the Kamimachi district of Ōtsuki will be used to confirm the validity of these findings. Attention will also be paid to the flow of labourers from Ōtsuki to towns and other villages, along with the flow in the opposite direction.

When the NAC of Kōriyama were used as the main source, the data for Ōtsuki showed that the number of *hōkō* migrants to Kōriyama was 0.51 people per household, the distance travelled was 5.50 km, the crop yield divided by the number of households was 11.19 *koku*, and the tax rate was 55%. The corresponding averages for all 35 villages in the County of Asaka were 0.73 people, 7.37 km, 8.47 *koku*, and 46%. In other words, Ōtsuki is a good fit for both models, with the proviso that since the residual is negative the number of migrants to Kōriyama is slightly less than the explanatory variables would suggest.

In the previous section, the location of a village within a *kumi* was shown to be unimportant, but in this section this variable will be examined once again, using the fact that Ōtsuki was the centre of a *kumi*. If *hōkō* labourers from smaller villages initially migrated to Ōtsuki, as the centre of their *kumi*, and went on from there to Kōriyama, as the centre of the county, it would mean that Ōtsuki harboured a large number of migrants from other villages in the *kumi*, and that it sent a correspondingly larger number of *hōkō* labourers to Kōriyama.

Table 1.2 shows the number of *hōkō* migrants according to the Ōtsuki NAC. When someone entered or left the village, this was counted as 1. Even if the records showed that a particular individual stayed longer than one year, s/he was only counted once.

45% of the *hōkō* labourers in Ōtsuki Kamimachi originated in Ōtsuki itself. The second most numerous were people from Ōtsuki Shimomachi and Katahira, the central village of Katahira *kumi*, both at 11%. Shimomoriya, which was part of Ōtsuki *kumi,* provided 4%. Both Katahira and Shimomoriya sent many *hōkō* labourers to Kōriyama. In the case of Katahira this was a reflection of its large population; in the case of Shimomoriya the reason was the low demand for labour within the village itself. In any case, the proposition that Ōtsuki attracted more *hōkō* labourers from within the *kumi* than from outside was not supported by the evidence.

The most popular destinations for inhabitants of Ōtsuki Kamimachi were samurai households in the castle town of Nihonmatsu, the seat of the lord of the domain, followed by Ōtsuki Kamimachi itself, Ōtsuki Shimomachi, the village of Ōtani, and then Kōriyama. When people migrated to nearby villages such as Ōtani, it was to work in specific wealthy households. Some of those who migrated to Kōriyama had relatives there, but the models did not allow for the verification of such networks.

Table 1.2 Number of *hōkō* migrants according to the Ōtsuki-kami NAC from 1796 to 1871

Category		Name of village/town	Immigrants to Ōtsuki-kami			Emigrants from Ōtsuki-kami		
			Female	Male	Total	Female	Male	Total
The County of Asaka		Akogashima	1	1	2	–	–	–
		Fukuhara	1	0	1	–	–	–
		Hideyama	–	–	–	1	2	3
		Horinouchi[a]	0	1	1	–	–	–
		Kamiizushima	1	0	1	–	–	–
		Katahira	12	23	35	4	4	8
		Koharada	0	2	2	1	1	2
		Kōriyama[b]	0	4	4	6	25	31
		Kōzu	3	7	10	3	2	5
		Nagahashi	1	2	3			–
		Natsuide	0	3	3			–
		Sasagawa	1	1	2			–
		Tomita	1	1	2	0	2	2
Nihonmatsu domain		Motomiyaminami	–	–	–	0	1	1
		Nakayama	–	–	–	0	1	1
		Nihonmatsu Castle town	–	–	–	0	7	7
		Obamanarita	–	–	–	1	1	2
Ōtsuki group		Funatsu	–	–	–	0	1	1
		Kawada	2	0	2	1	2	3
		Komaya	0	2	2	11	8	19
		Nabeyama	0	1	1	2	5	7
		Narita	3	5	8	1	2	3
		Ōtani	3	3	6	9	21	30
		Shimomoriya	7	5	12	0	1	1
		Tadano	4	5	9	2	3	5
		Tomioka	–	–	–	1	0	1
		Yamaguchi	3	7	10	–	–	–
		Yawata	1	3	4	3	5	8
		Yokozawa	0	1	1	–	–	–
Within Ōtsuki		Ōtsuki-kami	49	96	145	53	99	152
		Ōtsuki-shimo	13	22	35	54	69	123
Other domain	Castle town	Kami Shirakawa	–	–	–	0	1	1
		Miharu	–	–	–	0	1	1

(continued)

Table 1.2 (continued)

Category		Name of village/town	Immigrants to Ōtsuki-kami			Emigrants from Ōtsuki-kami		
			Female	Male	Total	Female	Male	Total
	The County of Minami Aizu	Sugisawa	0	1	1	–	–	–
	The County of Tamura	Kamimiharugoryō Ōhata	1	0	1	–	–	–
Working at warrior house, domain assigned labour etc.			–	–	–	11	231	242
Unknown			12	10	22	2	11	13
Total			119	206	325	166	506	672

[a]This person was originally villager of Ōtsuki-kami
[b]Kōriyama, Kōriyama-kami, Kōriyama-shimo

In addition to the situation revealed by the models, there are two further important elements aspects of *hōkō* labouring in Ōtsuki Kamimachi that need to be mentioned. The first point, which is extremely interesting in terms of historical demography, is the existence of several married couples who migrated either from or into the same household. In the case of out migration, this applies to 19% of females and 6% of males (9% in total), and in the case of in migration to 9% of females and 5% of males (7% in total). These include a case where the wife returned to the household of her in-laws to give birth. In other words, as was also mentioned previously, *hōkō* labour did not prevent people from having children.

The second point is that there was a tendency for the sons and grandsons of someone who had worked in a samurai household to work in the same household. *Hōkō* labour in samurai households and *atedenin*, posts that were allocated by the domain, differed from labour in normal households in villages and towns. Almost all the labourers were male, and some of them were sent to Edo, where all domains had a presence, or to Futtsu in the province of Kazusa. This was after Nihonmatsu was made responsible for the Futtsu coastal defences in the closing years of the Tokugawa period (Sagara 1990).

Once people began to work as *hōkō* labourers, most continued to do so, whatever the nature of their work might be. Even household heads and their wives became *hōkō* labourers. This suggests that *hōkō* labour was not a temporary phase in people's lives occasioned by the need to earn extra income when taxes could not be paid, but that people were forced to sell their labour in order to live from day to day, whether they wanted to or not. Both those who had been born in Ōtsuki, and those who had migrated there, were working as wage labourers.

This situation was linked to a shift in labour pattern from the practice of living on site at the place of work to the practice of living elsewhere and travelling to work. As in the case of Kōriyama, there were a number of migrants who initially lived as lodgers (*yakkai*—the basic meaning of which is "being troublesome to" or "dependent on"—or *magarinin*) in households that already existed, but eventually set up their own independent households. Later, some of them became temporary inhabitants, or *tanagari* (tenants), in Kōriyama, and worked as day labourers.

1.4.3 Labour Migration from Shimomoriya

Attention will now be shifted to the work patterns of *hōkō* labourers in Shimomoriya, a small village in the County of Asaka. As was stated above, the number of *hōkō* migrants from Shimomoriya to Kōriyama was higher than the models suggest. However, towards the end of the period under study, the number of *hōkō* labourers in the village decreased, until there were hardly any *hōkō* migrants to Kōriyama (Narimatsu 1985). This can be explained by changes in working patterns, and by a rise in the demand for labour within the village caused, among other things, by the development of cash crop cultivation. This meant that villagers no longer needed to migrate in order to find work (Hayami et al. 1998).

According to Narimatsu (1985), if *hōkō* labour in samurai households is not included, the main destination for *hōkō* migration from Shimomoriya was Kōriyama, followed by the villages of Tomioka and Ōtsuki. Once again, the hypothesis that people migrating from small villages might have used larger villages as a stepping-stone on the way to towns was investigated, this time from the point of view of inhabitants of Shimomoriya who migrated to Ōtsuki. Consideration was also given to the existence of factors behind labour migration that were not included in the models.

The NAC for Shimomoriya show 103 people migrating to Kōriyama as *hōkō* labourers (Table 1.3). 70 of these had experienced *hōkō* labour before going to Kōriyama, 21 had no previous experience of *hōkō* labour, and in the case of the remaining 12 there was no evidence either way. Of those 70, 42 had been *hōkō* labourers in Shimomoriya itself, 11 had worked in nearby Tomioka, and 6 had gone to the village of Arai, which was in the *kumi* of Kōriyama. Only 4 of the 70 had gone to Ōtsuki, even though it stood at the centre of the *kumi*. After finishing their term of labour in Kōriyama, some continued as *hōkō* workers, either in Shimomoriya, in other villages, or in Kōriyama once again.

This evidence shows that Kōriyama was one of the *hōkō* destinations to which a worker from Shimomoriya might migrate several times. For example, a woman who was born in Shimomoriya in 1772 became head of the household when her younger brother died at an early age. Despite becoming household head she began to work as a *hōkō* labourer within the village. She married and had children. After all this had happened, she worked for three years as a *hōkō* labourer of the indefinite bondage type in the household of the Abe family, who were engaged in pawnbroking, selling

Table 1.3 Villagers of Shimomoriya who had working experience as *hōkō* labourer in Kōriyama

	Female	Male	Total
Working experience before Kōriyama			
Have	23	47	70
Don't have	4	17	21
Unknown	5	7	12
Total	32	71	103
Working experience after Kōriyama			
Have	22	54	76
Don't have	7	10	17
Unknown	3	7	10
Total	32	71	103

Source Shimomoriya NAC from 1708 to 1872

miscellaneous goods, and cotton ginning. She then returned to Shimomoriya only to go back to Kōriyama again, this time as a *hōkō* wage labourer in the household of the Masuko family, who were engaged in pawnbroking and the selling of saké. Her particular labour pattern suggests that she worked as a *hōkō* labourer when the family cycle of her own household did not require female labour. In any case, it is clear that Kōriyama was the most important labour market for inhabitants of Shimomoriya who needed to migrate in order to supplement their household income.

1.5 The Kōriyama Labour Market from the Demand Side: Kōriyama Merchants in Profile

Up to this point, the chapter has focussed on the factors determining the labour flow to Kōriyama from villages in Asaka. Over time, the size of this flow decreased. In fact, from 1836, the Kōriyama NAC records for labour in migration per year never reached even 10 people. Detailed studies of the situation in Shimomoriya support this finding (Narimatsu 1985; Nagata 1998).

1.5.1 Large Scale Merchants and the Prosperity of Kōriyama

Kōriyama prospered as a post town during the early modern period. A history of the town states that "many travellers wished to stop at Kōriyama, and a number of lords of domains preferred it to the post towns of Sukagawa and Motomiya", which were on the same stretch of the Ōshū Highway (Kōriyamashi 1974, p. 153). Prosperity led to an increased demand for labour. The town had many merchants, including inn-keepers, pawnbrokers, owners of cotton gins and sellers of kimono fabric (Morita 1976), and many *hōkō* labourers worked in the businesses of these merchants, or as their servants. A number of merchants who had made donations to

Nihonmatsu domain were given samurai status. This allowed them to carry swords and use surnames.

This section will examine a number of merchant households that were large-scale employers of *hōkō* labourers from the eighteenth through to the nineteenth century (Table 1.4). The period under consideration in this chapter, 1729–1870, was divided into six phases: 1729–1750, 1751–1775, 1776–1800, 1801–1825, 1826–1850, and 1851–1870. Table 1.4 contains details for the three households that employed the largest numbers of *hōkō* labourers for 1729–1750, and for 1851–1870. All the evidence that could be obtained for their business activities is given, along with the average numbers of their *hōkō* labourers broken down according to gender.

This information made it possible to build the following profiles of merchant households that employed large numbers of migrant labourers. Since none of the three families that are at the top of the list for the first phase are among the top three in the table for the sixth phase, it is clear that new families have come to the fore. The Nagato family, the highest-placed employer in the first phase, dealt in a wide variety of products, including dry goods, saké, sugar, salt, hair oil, and fish. It was also involved in business dealings with the domain. On the other hand, at least one of the large *hōkō* employers of the sixth phase was involved in enterprises that offered meals and accommodation to travellers along the highway as well as being involved in trade. Most of their employees were young women who were not from villages in Asaka but from the province of Echigo. This is the symptom of a change in employment practices in Kōriyama. Towards the end of the early modern period, there was an increase in Kōriyama's importance relative to both the domain headquarters and to nearby post towns. As a result, the demand for labourers typically associated with post towns such as packhorse drivers and *meshimori onna* grew. At the same time, powerful merchants had changed their employment patterns. Their labourers no longer lived on site, but travelled to and from work every day.

1.5.2 Changes in Hōkō *Labour Patterns from the Eighteenth to Nineteenth Centuries*

Throughout the period from 1709 to 1870, the high demand for labour in Kōriyama pulled in many people from outside. This demand was not a result of the need to replace losses caused by death, the argument associated with the urban graveyard theory. In fact, the result of this migration was an actual increase in the overall population.

The inflow of population into Kōriyama was caused by *hōkō* labourers, permanent settlement (*hikkoshi*), marriage, and adoption, in that order (Table 1.5). *Hōkō* labourers would return to their village of out migration after a few years, when their period of labour was finished. Some switched to working in a different household, either in Kōriyama or in a nearby village. Since these people only lived in Kōriyama on a temporary basis, their existence does not support the proposition that the population

Table 1.4 Households with many servants

		1729–1750 top three			1851–1870 top three		
		Nagato	Kashiwagi	Usui	Munakata	Yokota	Igarashi
Type of business and status of Kōriyama		Merchant selling many commodities like raw silk, dry goods, cotton, wax, hair oil, fish, rice, saké, drug, sugar and salt. Also running a pawnshop	Merchant selling saké. Joint and several surety of *kendan* (one category of town officials) (1832–1836)	*Kendan* (one category of town officials) (1820)	Running inn, selling dry goods. *Kumi-gashira* (one category of town officials) (1795)	*Kumi-gashira* (one category of town officials) (1766–1779)	Running inn
The origin of the household		Eastern part of Japan	Branch house of Nagato	Mogi village in the County of Tamura	NA	NA	Migrated from Inawashiro village in Aizu domain in 1818
The average number of servants per year							
1729–1750	Male	12.00	10.36	3.86	1.14	1.50	–
	Female	5.43	5.36	7.93	2.93	2.00	–
	Total	17.43	15.71	11.79	4.07	3.50	–
1751–1775	Male	8.65	6.24	3.35	0.35	1.18	–
	Female	3.82	3.47	5.18	0.18	2.53	–
	Total	12.47	9.71	8.53	0.53	3.71	–
1776–1800	Male	1.96	2.17	1.96	0.00	1.13	–
	Female	0.35	0.61	6.35	3.00	3.74	–
	Total	2.30	2.78	8.30	3.00	4.87	–

(continued)

Table 1.4 (continued)

		1729–1750 top three			1851–1870 top three		
		Nagato	Kashiwagi	Usui	Munakata	Yokota	Igarashi
1801–1825	Male	2.38	3.96	1.75	0.00	1.13	0.00
	Female	1.13	1.00	11.71	3.25	11.79	0.79
	Total	3.50	4.96	13.46	3.25	12.92	0.79
1826–1850	Male	8.64	7.96	1.56	0.04	0.00	0.00
	Female	5.16	2.60	1.44	12.08	14.00	5.76
	Total	13.80	10.56	3.00	12.12	14.00	5.76
1851–1870	Male	1.41	2.94	0.94	0.12	0.00	0.00
	Female	0.65	0.00	0.24	20.71	18.29	9.00
	Total	2.06	2.94	1.18	20.82	18.29	9.00

Source Kōriyama NAC data, Kōriyamashi (1971), pp. 117–134, Kōriyama Historical Museum (Year Unknown). I chose top three households which had many servants in 1729–1750 and 1851–1870 and traced the number of servants in each quarter of a century from 1729–1870

Table 1.5 Number of migrants to Kōriyama by reason from 1729 to 1870

Reason	Immigrant	Emigrant	Net migrant
Moving	1,844	315	1,529
Lodging	726	149	577
Adoption	1,241	700	541
Marriage	1,558	1,050	508
Service	5,206	4,864	342
Tenant	667	660	7
Absconding	0	1,773	−1,773
Others[a] unknown	385	100	285
Total	11,627	9,611	2,016

Source Kōriyama-kami NAC from 1729 to 1870
[a]Include cousins and so on moving into existing household

increase was caused by labour migration. However, since net inflow as a result of permanent settlement was high, it is possible to say that this was the cause of the population increase. There were also people who moved to Kōriyama as lodgers in existing households and later formed their own independent households.

From around 1800, there was a decrease in the number of households employing *hōkō* labourers in Kōriyama, and in the number of *hōkō* labourers as well, with the exception of young girls from Echigo province. As was explained earlier, these girls were called *meshimori onna*. They worked as serving girls in inns, but many were also sex workers.

The decrease in *hōkō* labourers was particularly evident in the case of males. As Table 1.6 shows, in migration by male *hōkō* labourers was 33.09 per year during the period 1729–1750, but only 1.55 per year during 1851 to 1870. There was also a slight decrease in the *hōkō* labour stock, in other words in the overall numbers of *hōkō*

Table 1.6 Number of immigrants by reason per year

	Female			Male		
Period	*Hōkō* labour	Marriage/adoption	Moving (temporary and permanent), lodgers etc.	*Hōkō* labour	Marriage/adoption	Moving (temporary and permanent), lodgers etc.
1729–1750	22.32	8.27	6.68	33.09	3.23	9.59
1751–1775	24.83	10.88	9.79	29.08	5.63	14.67
1776–1800	16.12	12.44	12.52	17.12	7.68	16.16
1801–1825	18.88	13.64	14.32	8.80	8.72	14.88
1826–1850	20.32	14.52	14.88	8.44	8.64	15.96
1851–1870	14.35	15.25	14.35	1.55	11.50	13.95

Source Kōriyama-kami NAC. Without any information regarding immigrants as *hōkō* labour in 1763, I put denominator of 1751–1775 as 24

labourers who were recorded as residents in the NAC (Figs. 1.3 and 1.4). However, in 1826 there was a large influx of *hōkō* labourers from villages in Asaka. It is likely that this was caused by the promotion of Kōriyama to town status, since labourers were needed to upgrade its infrastructure, for example to work on improving the highway, constructing inner and outer gates to the town and the space between them, and also providing a park, Kyōrakuen. Included in the NAC for this year were *hōkō* labourers working on the infrastructure whose names were included as members of the households of important families such as the Nagato, Yamaguchi, Takeda and Kashiwagi. As the household heads of these families had gained samurai status, they were no longer listed in the NAC records for their households.

There are three possible explanations for the fact that *hōkō* migration from within Asaka declined even though the demand for labour in Kōriyama had not. They are:

(1) A shift in work patterns from *hōkō* labour to daily labour by off site workers.
(2) A tendency for people who continued to work as *hōkō* labourers to stay in the same positions for longer periods such as over ten years (Table 1.7).
(3) People had made a permanent move to Kōriyama and then started to work there. (This would have increased the supply of labour from within the town.)

With regard to a possible shift in work patterns (reason 1), out of 668 households in "modern", post-Tokugawa, records, 12% came under the category of day labourer (Morita 1976). Further, the Kōriyama NAC show that the number of households that were employing *hōkō* labourers declined, and that the decline occurred in medium- rather than in large-scale merchant households. This decline cannot be explained completely by the tendency for periods of *hōkō* employment to lengthen (reason 2), so it is likely that a shift in work patterns was involved.

Table 1.7 The changing duration for working

Period	Average working duration (years)[a]	Available years[b]	a/b (%)
1729–1750	2.38	14	17
1751–1775	2.33	17	14
1776–1800	2.92	23	13
1801–1825	4.55	24	19
1826–1850	6.13	25	25
1851–1870	5.56	17	33
Average	3.98	20	20

Source Kōriyama NAC data (1729–1870)
[a]Average working duration does not contain years without NAC data
[b]The available years mean the years with NAC records

Terms of *hōkō* employment changed from an average of 2.38 years[6] in the period 1729–1750 to 2.33 in 1751–1775, 2.92 in 1776–1800, 4.55 in 1801–1825, 6.13 in 1826–1850, and 5.56 in 1851–1870.[7] The longest period for continuous service as a *hōkō* labourer is the 46 years worked by a man who appears in the records as a *yamori*, which means that he was probably fulfilling all the roles expected of the head of the household. From the second half of the eighteenth century the heads of a number of the larger households were granted samurai status, with the result that they themselves no longer featured in the NAC records for their households. One natural consequence was an increase in the number of *yamori*. The average period of *hōkō* employment as a *yamori* was 7.67 years, as opposed to 3.51 years for other types of *hōkō* labour.

Many inhabitants of Kōriyama worked as *hōkō* labourers during the period under consideration. Those who came to the town as newcomers also joined the internal *hōkō* labour market. In other words, if people who originally migrated from nearby villages temporarily as tenants or from farther villages on a permanent basis later began to work as *hōkō* labourers, they were not included in the figures for labour migration.

Domain governments sometimes prohibited migration outside the territory for the purpose of work. If a domain had strong control of its inhabitants, it would be difficult for them to work in other domains unless they abandoned their homes and ran away without permission. However, there were some regions where individual villages were divided so that jurisdiction lay with two or more domains, and in such regions, migration was relatively easy. Echigo, in northwestern Japan, was a province that included regions of this type. But in any case, labour migration in early modern Japan was much more widespread than scholars used to think (Hayami 1992; Narimatsu 1992). Many people migrated several times during their lives, and their movements were recorded in NAC.

There are a variety of ways in which NAC recorded cases of labour migration. For the purposes of this chapter, they have been divided into four:

(1) *Hōkō* labour in samurai households, for example as foot soldiers, low-level officials, low-level servants, and wet nurses
(2) *Hōkō* labour in administrative posts (assignments to particular villages at the direction of the domain government, such as *atedenin hōkō*)
(3) *Hōkō* labour in private households, such as the households of village heads, merchants and farmers
(4) *Hōkō* labour peculiar to post towns, for example packhorse driver or *meshimori onna*

[6]The period counted here refers to continuity of status within a household as recorded in the NAC. For example, if the status of someone who had been recorded as a maid was changed to "wife", only the number of years spent as a maid was counted. When there were gaps in the actual records, the possibility of a temporary interruption in service was disregarded.

[7]The figure for the last period appears to be smaller because the period is shorter.

Most of the labourers in categories (1) and (2) were male except wet nurses. In the case of labour in samurai households, a labourer's family might migrate too. In the case of (4), *meshimori onna* were almost all young women from outside Nihonmatsu, as has already been stated.

These differences suggest that the labour market for each category was different as well. *Hōkō* labourers who migrated to Kōriyama belonged to categories (3) and (4). Category (3) were from Asaka, and included both men and women of all ages, and labourers of both the indefinite debt bondage and the wage labour types. In fact, with the exception of Echigo province, almost all *hōkō* labourers who migrated to Kōriyama were from Asaka, meaning that there were few migrants even from Adachi, the other county in the domain.

From the second half of the eighteenth century, *hōkō* migration from Echigo reached the same level as that from Asaka, and came to exceed it in almost every year after 1810. The main reason for this was a decrease in *hōkō* migration from within Asaka, caused by a growing tendency for villagers to labour in their own villages rather than migrate out.

From the nineteenth century, the NAC show larger numbers of indefinite debt bondage labourers than wage labourers. This appears to challenge the accepted theory of a steady shift towards wage labour, but is easily explained by the overall shift in the pattern of *hōkō* migration to Kōriyama, from wage labourers from Asaka to indefinite bondage labourers from Echigo.

The main feature of labour migration in the case of Kōriyama is the large number of *hōkō* migrants from villages in Asaka, but it is also true that levels of out migration by *hōkō* labourers were low. Migrants from Kōriyama tended to be people who had been assigned to work by the domain, or people going to work in samurai households in the castle town headquarters. The reason for the low level of out versus in migration may be that because it was a post town, labour conditions, including wages, were relatively favourable. This would have enabled the labour market in the town to exercise a strong pull factor.

1.6 Conclusions

The primary factors in determining *hōkō* migration from villages in Asaka to Kōriyama were proximity and the economic situation of the village as indicated by the tax rate. Investigations of the supply side showed that villages that were nearer to Kōriyama and had lower tax rates, meaning that they were poorer, were more likely to supply the town with labour. If people were easily able to earn more by leaving their household and native village than by staying and working in the fields, they would do so.

In tune with the findings of other studies of the labour market in early modern Japan, this study found that as time went on there was a shift in work patterns from *hōkō* labour, where the labourer lived in the household of the employer, to living away from the workplace in accommodation that had no links with the employer. On

the other hand, *hōkō* labourers who remained with the same employer, such as those who were acting as deputy household heads, came to continue in the same work for comparatively longer periods.

As one would expect, regions where there was a high demand for labour experienced higher inflows of labourers. The labour market of Kōriyama can be broken down into the following categories: work for merchants specializing in fields such as pawnbroking, saké brewing, and the sale of kimono fabric; work related to Kōriyama's role as a post town, in inns and as packhorse drivers, entertainers and so on, including *meshimori onna*; work in the households of people appointed as headmen; work on the town's infrastructure; and people assigned by their villages to perform administrative tasks in Kōriyama, for example as keeper of the village rice storehouse.[8]

Although in terms of actual numbers there were more labour migrants to Kōriyama from the central villages of the other two Asaka *kumi*, Ōtsuki and Katahira, than from anywhere else in the county, when numbers of migrants were divided by the number of households, the levels were the same. In other words, there was no particular relation between labour migration and the nature of *kumi* membership. Similarly, there was no difference in the labour demand of different sizes of village even though influential villagers, such as village heads, had a higher demand for labour irrespective of the size of the village. This means that although there was a correlation between the size of a village and its labour supply, there was no such correlation in the case of demand.

Kōriyama stood at the centre of the economy of the County of Asaka. Unlike the castle town of Nihonmatsu, which stagnated as a result of the domain's straitened financial circumstances and the many regulations, it experienced both economic development and population growth (Fukushimaken 1970). The domain offices (*daikansho*) for each of the Asaka *kumi* were located in Kōriyama (Kōriyamashi 1974, pp. 148–149). This meant that although Kōriyama, Ōtsuki and Katahira were all head villages of their respective *kumi*, the latter two effectively shared the same status as the other villages in Asaka. Because of its high demand for labour, Kōriyama attracted many workers, not only from inside the domain, but also from other regions, such as Echigo. One reason for this was its convenient geographical location at the crossroads between the Ōshū Highway running from south to north, and a road running from east to west that passed through the domain of Aizu and connected the region with the province of Echigo.

Since this study has used villages as the units of analysis, the situation at the level of individual households has been ignored. Yet the situation surrounding each individual was an important factor in determining whether that person or the household head would become a labour migrant. Fortunately, excellent research regarding this aspect has already been carried out with regard to Shimomoriya (Nagata 1998, 1999; Narimatsu 1985).

[8]The Kōriyama NAC show that a number of such officials did not come as *hōkō* labourers but were registered as having moved permanently or as tenants, and lived with their families. A number of the households formed in this way went on to employ *hōkō* labourers in Kōriyama.

Migrants from Shimomoriya might go on to work for different households if there was a strong demand for their labour, but in the end they all returned to their own homes. Some migrants had experience of working as *hōkō* labourers in their own villages or in villages that were nearby before they went to Kōriyama. In Nihonmatsu domain even household heads and their wives participated in *hōkō* migration.

The Kōriyama *hōkō* labour market can be divided into the following categories: work for samurai households, administrative work, work in the households of merchant and headmen, and work as *meshimori onna*. Each category tended to attract workers of a particular age, gender and region of origin. The labour market changed over time as a result of Kōriyama's change in status from village to town, and in tandem with improvements in the economic situation of villages in Asaka.

Labour migrants from outside Kōriyama belonged to either of two different labour markets. One was for men and women of a wide age range who came from villages in Asaka; the other was a market characteristic of post towns that attracted young women from other domains in provinces such as Echigo. The size of the former declined, but the terms of employment grew longer. Meanwhile, large-scale merchants came to employ workers who did not live on site, including day labourers. In addition, many landless peasants also came from Echigo with their families, and remained in the town as day labourers. Their arrival is the main reason for the steady increase in the town's population. On the other hand, there was an expansion in the labour market for female *hōkō* labourers from outside the domain, young women who lived too far away to travel to the workplace every day. They were normally *hōkō* labourers of the debt bondage type.

Further research on this topic will require use of sources other than NAC. One area deserving of investigation is wages, which are thought to have been an important factor in attracting workers to Kōriyama. Another would be to reexamine the variables to see which offer the best indicators of the economic state of farming villages, and which give the best explanation for scales of labour out-migration to Kōriyama.

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Chapter 2
Economic Development and Labour Supply in Underdeveloped Regions: An Analysis of the Labour Supply of Domestic Servants in Northern Akita Prefecture, Japan, 1910–1924

Masahiro Ogiyama

Abstract In industrialising Japan, labour supplies depended on regional differences in economic development. Large parts of Japan were underdeveloped regions characterised by delayed industrialisation and relatively low agricultural productivity. However, little is known about how economic conditions affected labour supplies in such regions. To answer this question, I investigated the employment of domestic servants in northern Akita Prefecture, a typical underdeveloped region, from the 1910s to the early 1920s. Until the early 1910s, wealthy families in this region recruited daughters from peasant families as domestic servants at a low fixed wage. This indicates that the supply of labour was unlimited, as defined by W. Arthur Lewis. From the late 1910s to the early 1920s, however, this region achieved remarkable agricultural growth. As a result, peasant families could obtain almost the same amount of income by having daughters work on farms as by sending them elsewhere to work as domestic servants. Employers of domestic servants therefore offered higher wages to recruit workers. This implies that in the underdeveloped regions, what had been an unlimited supply of labour was transformed into a limited supply due to agricultural growth.

Keywords Labour supply · Industrialisation · Agricultural growth · Domestic servant · Peasant · Japan

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2.1 Introduction

In an industrialising economy, the agricultural sector serves as a major source of labour supply for the non-agricultural sector. Thus, an analysis of how labour was supplied from the agricultural to the non-agricultural sector helps elucidate the process of economic development. The research presented below was undertaken as a way to look once more at Japan's experience before the Second World War, because scholarly debate has persisted, unresolved, on whether the supply of labour was limited or unlimited in industrialising Japan.

A limited supply of labour denotes a situation in which a wage equal to marginal labour productivity is paid to a worker because every business unit in both the agricultural and non-agricultural sectors makes efficient use of labour to maximise profits. Conversely, an unlimited supply of labour indicates a situation in which, due to surplus labour in the agricultural sector, a minimum subsistence wage is paid to workers in both the agricultural and non-agricultural sectors. The surplus labour in the agricultural sector leads to an excess supply of labour in both the agricultural and the non-agricultural sectors and hence decreases marginal labour productivity below subsistence costs in both sectors. Thus, a minimum subsistence wage, not marginal labour productivity, is offered to a worker as livelihood.

A related issue in the case of Japan's industrialisation has been debated in what is known as the "turning point" debate. The scholars engaged in this debate share the view that the supply of labour remained unlimited on a national scale in preindustrial Japan, but they differ on when industrialisation transformed the unlimited supply of labour into a limited one. Yasuba (1980) argues that the transformation occurred around the beginning of the twentieth century, Fei et al. (1986) date it to the economic boom of the First World War, and Minami (1970) and Odaka (2004) locate it in the high-growth era (1955–73) that followed the Second World War.

However, because the labour market was not yet integrated on a national scale before the Second World War, there was no one period in industrialising Japan, in which the unlimited supply of labour became limited simultaneously throughout the country. Moreover, the degree of agricultural productivity and industrialisation, which affected labour supplies, varied by region (Umemura 1961). The turning-point debate has neglected such regional differences. The literature on this debate has analysed the transformation of the labour supply on a national scale, by aggregating local data without regard for regional differences.

Thus, we could not learn how labour was supplied in local labour markets using the same approach as that of the turning-point debate. Previous studies on local economies have therefore cast doubt on the "turning-point" literature. Nishikawa's case studies (1978, 1985) of preindustrial Chōshū (Fig. 2.1) in the 1840s have made a significant contribution in this regard. Using the quasi-census conducted by the lord of Chōshū, Nishikawa estimated the marginal labour productivity of both farming and by-employments and compared them with wage rates for various jobs. Based on this analysis, he argued that the supply of labour was already limited in Chōshū due to high agricultural productivity and productive by-employments. His study disproves

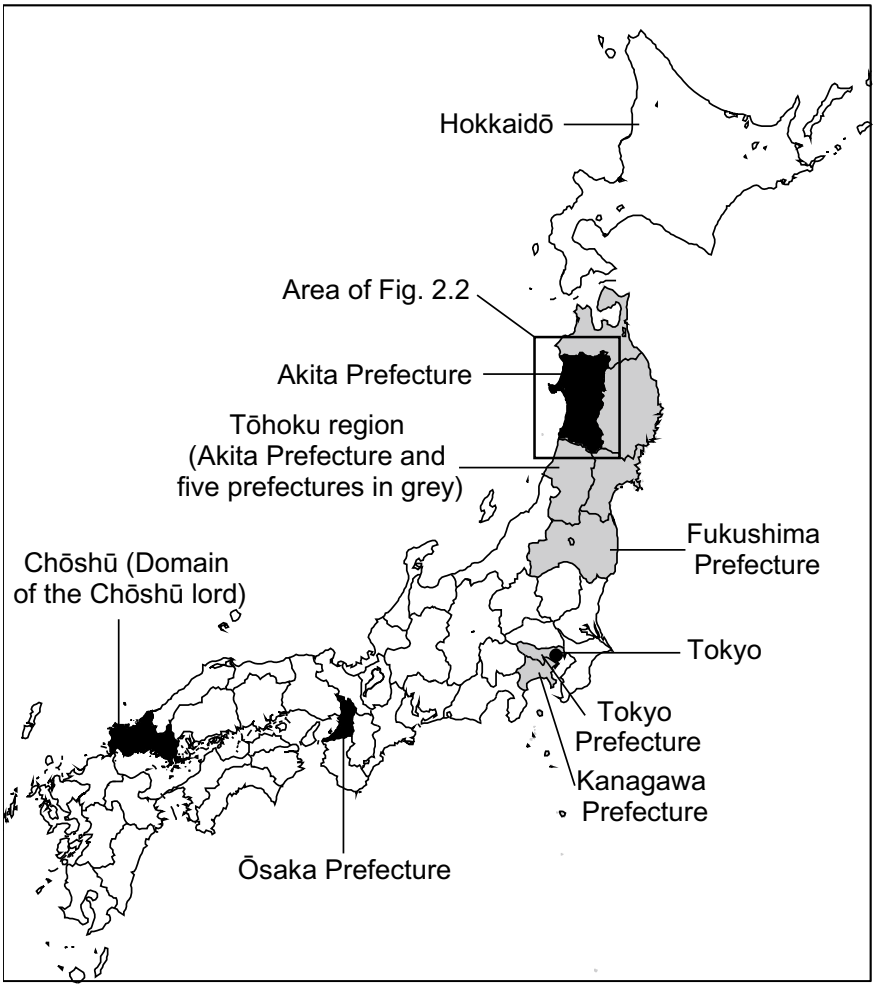

Fig. 2.1 Locations of Akita Prefecture and other regions concerned. *Source* Created by the author

the premise of the turning-point debate that the supply of labour remained unlimited on a national scale in preindustrial Japan.

Nevertheless, this does not mean that the entire country was already experiencing a limited supply of labour during preindustrial times. Even after the beginning of industrialisation, Japan had great regional differences in industrial growth as well as the development of agriculture and by-employments. Except for the case of Chōshū, however, little is known about how labour was supplied in local labour markets. The present study sought to address two problems: first, how to analyse how labour supplies in local labour markets varied regionally and second, in line with the turning-point debate,

to outline how labour was supplied on a national scale while paying due attention to regional differences in local labour markets.

Using agricultural productivity as a criterion for distinguishing between developed and underdeveloped areas, it appears that the developed regions of Japan, which achieved agricultural growth in preindustrial times, tended to industrialise rapidly. Ōsaka Prefecture (Fig. 2.1) was a notable example. Furthermore, the case of Chōshū suggests that after the beginning of industrialisation, a growing demand for labour in the non-agricultural sector in these developed regions intensified the limited supply of labour because high agricultural productivity was already limiting the supply of labour.

Industrialising Japan also had underdeveloped areas, however, such as the Tōhoku region (Fig. 2.1), which were characterised by delayed industrialisation as well as relatively low agricultural productivity. What occurred in the labour markets of these areas remains to be explored. In underdeveloped regions that, with abundant surplus labour, had attained neither industrialisation nor agricultural growth, labour shortages and a shift from an unlimited to a limited supply of labour could only be the result of an increase in labour outflow to developed areas. In such cases, whether the transformation of the labour supply occurred or not would depend entirely on the demand for labour in developed regions (Ushiyama 1975; Shimizu 1981). This assumption would no longer stand, however, if even underdeveloped regions were shown to have achieved significant agricultural development. Farming was the economic mainstay of these regions. If agricultural growth in underdeveloped regions increased the marginal labour productivity of farming, it would be local economic development led by agricultural growth, not the outflow of labour, that would determine the labour supply. Therefore, the underdeveloped regions provide a clue to understanding how the transformation of the labour supply occurred on a national scale.

I therefore examine the labour supply of domestic servants in northern Akita Prefecture (Fig. 2.1), part of the Tōhoku region, from the 1910s to the early 1920s, and based on this analysis, I also outline how labour was supplied on a national scale in industrialising Japan. Northern Akita Prefecture was one of the least developed areas in terms of both industrialisation and agricultural productivity. Hence, the economic boom of the First World War led factory managers in metropolitan areas around Tokyo (Fig. 2.1) in the late 1910s to begin recruiting young women from northern Akita Prefecture as factory workers. This recruitment caused an increase in labour outflow from this region to developed regions. Nevertheless, the outflow of labour was not the only factor that affected the region's supply of labour. From the 1910s to the early 1920s, northern Akita Prefecture also achieved a sharp increase in agricultural productivity. This agricultural growth limited the supply of labour available for movement from the agricultural to the non-agricultural sector. This change also had a great impact on the labour supply of domestic servants because most such positions were occupied by unmarried young women from peasant families, and with agricultural growth, these peasant families could now have daughters stay within their households to work on farms, instead of sending them to work as domestic servants or factory workers (Odaka 1989, 1995).

Moreover, the case of domestic servants merits analysis for the following reasons. To obtain direct evidence for assessing whether the labour supply was limited or unlimited in a local labour market, we have to estimate marginal labour productivity in the agricultural sector and compare the result with the wage rate in this sector. However, data limitations prevent us from conducting this analysis for regions other than Chōshū, which has a quasi-census. In addition, though the wages of agricultural workers, which enable us to calculate the wage rate in the agricultural sector, are listed in local official statistics, such workers comprised both annual and daily contract workers. Since these two groups differed in jobs as well as attributes such as age, gender, or marital status, they had different wage rates. It remains arguable which wage rate should be compared with the marginal labour productivity of farming (Saito 2008).

In contrast, domestic servants constituted a relatively homogeneous group. Most domestic servants were unmarried young women hired as live-in servants to do housework. Since domestic servants were mainly from peasant families, their wage rate serves as a clue for examining whether the labour supply available to move from the agricultural to the non-agricultural sector was limited or unlimited. If the supply of labour was limited in a local labour market, an increase in the marginal labour productivity of farming would raise the wage rate in the agricultural sector, limit the labour supply for movement from the agricultural to the non-agricultural sector, and finally lead to an increase in the wage rate in the non-agricultural sector. Conversely, given an unlimited supply of labour in a local labour market, the outflow of labour from the agricultural to the non-agricultural sector would continue at a fixed subsistence wage. This means there is value in exploring how the balance of supply of and demand for domestic servants affected their wage rate in a local labour market.

Nevertheless, existing studies on the employment of domestic servants have been examining only the case of a developed region, namely Ōsaka Prefecture (Ogiyama 1999, 2007). From the 1890s on, employers of domestic servants in this region were competing with textile industries to recruit workers and therefore offered higher wages to hire workers. The employment of domestic servants in the underdeveloped regions remains to be investigated. Thus, by analysing the employment of domestic servants in northern Akita Prefecture, I show that even in this region, from the 1910s to the early 1920s, local economic development led by agricultural growth limited the labour supply available for movement from the agricultural to the non-agricultural sector.

For analysis, I use the Nakada Family Papers as well as local official statistics such as the statistical yearbooks of Akita Prefecture. The Nakada Family, engaged in land leasing and money lending, was a wealthy family in Ōdate (Fig. 2.2), a major town in the northernmost part of Akita Prefecture (Ōishi 1957; Ōdate shishi hensan iinkai 1983, pp. 201–203). The records of domestic servants in the Nakada Family Papers provide sufficient data for analysis of how the family employed them, including workers' attributes, wage payments, and duration of employment. The local official statistics provide data for the analysis of economic conditions such as agricultural production in northern Akita. The rest of this chapter proceeds as

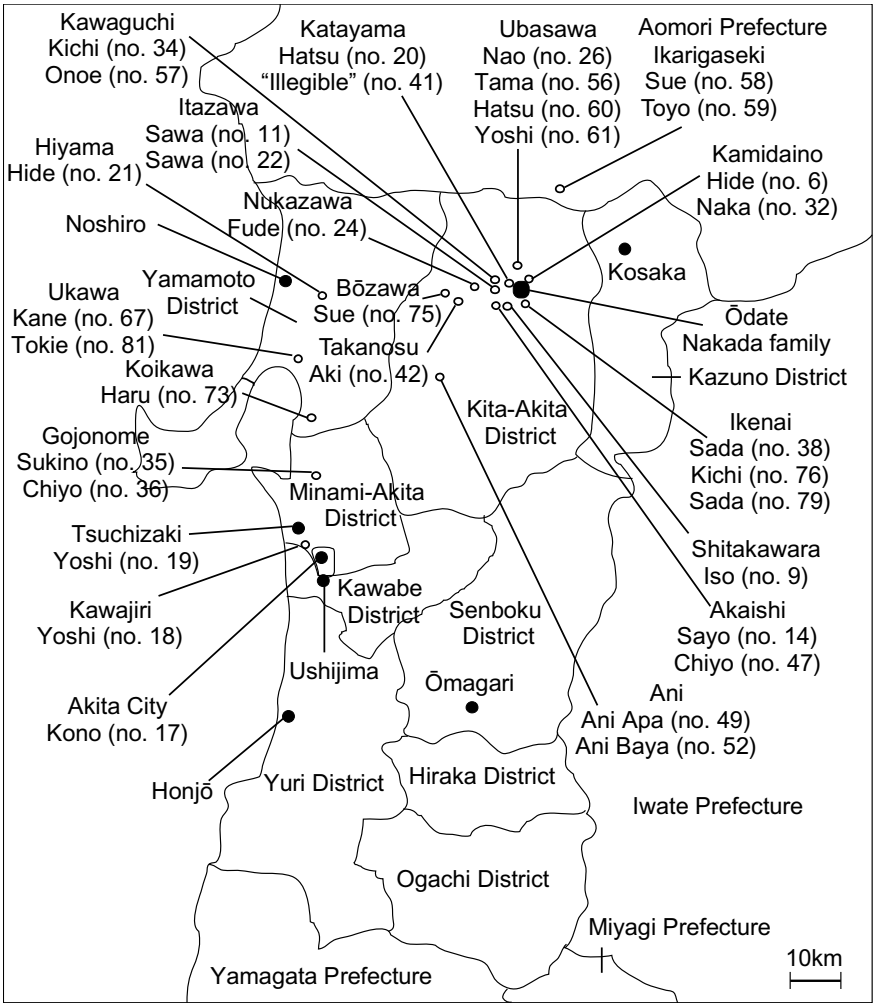

Fig. 2.2 Locations of the homes of the domestic servants hired by the Nakada family. *Sources* KKS, Nakada-ke Monjo, no. 52, no. 54a, no. 54b, no. 54c, no. 54d, no. 55a, and no. 55b
Notes Of the domestic servants who stayed with the Nakada family from 1910 to 1924, this figure shows those cases in which a worker's home town is specified in the source. The numbers alongside each name refer to the series of numbers I assigned to all the domestic servants noted above in order of the dates when each was employed

follows. Section 2.2 outlines how the Nakada Family employed domestic servants. Section 2.3 examines what factors affected the labour supply of domestic servants in northern Akita Prefecture in the early 1910s. Section 2.4 explains that agricultural growth in this region caused severe labour shortages of domestic servants and hence led to a sharp increase in their wage levels from the late 1910s to the early 1920s.

2.2 Employment of Domestic Servants

Akita Prefecture was hardly industrialised prior to the Second World War, as reflected in its occupational structure. The 1920 census shows that of the total working population (both sexes), those engaged in the non-agricultural sector accounted for 33.1% in Akita Prefecture, as against 85.5% in Ōsaka Prefecture and a national average of 46.1% (Naikaku Tōkeikyoku 1928–1929, vol. 2, pp. 8–11, 40).[1] Even in underdeveloped regions, some areas had developed silk-cocoon production by breeding silkworms, one of the most profitable by-employments available to peasant families. But whereas 34.9% of total households produced silk cocoons in 1920 in Fukushima Prefecture (Fig. 2.1), located in the southern Tōhoku, only 10.4% did so in Akita Prefecture, which is north of Fukushima Prefecture, due to the cold climate there (Nōshōmushō 1922; Naikaku Tōkeikyoku 1928–1929, vol. 1, p. 115).

Akita Prefecture also had gaps between its own northern and the southern districts. In the southern Akita districts of Hiraka and Ogachi (Fig. 2.2), 16.2 and 38.0% of total households respectively were engaged in silk-cocoon production in 1920. Only 6.4% were similarly engaged in the remainder of Akita Prefecture, however (Akita-ken 1912–1925, 1920 version; Naikaku Tōkeikyoku 1927, pp. 2–6). Thus, except for these two southern districts, Akita Prefecture was one of Japan's least developed regions both in industrialisation and in silk-cocoon production. Accordingly, I define the portion of Akita Prefecture that excludes the two southern districts as "northern Akita Prefecture".

Farming was the economic mainstay of northern Akita Prefecture, as was also mirrored in its occupational structure. According to the 1930 census, the first survey that specifies the number of domestic servants by district, agriculture had the largest number of female workers (97,367), at 76.9% of the total female working population in northern Akita Prefecture.[2] The second and third largest were

[1] I calculated total working population as follows. First, using the lists of people with principal occupations, I excluded those classified as "independent" from the total figure. Then, I added to that the figure pertaining to the number of live-in servants, who were not included in the population with principal occupations. I also calculated the number of workers in the non-agricultural sector by subtracting from the total working population the number of those whose principal occupations were listed as "agriculture" and "fishery".

[2] Since the 1930 census, unlike the 1920 census, classifies live-in servants as those with principal occupations, I calculated the total female working population by subtracting the number of women in the "principal occupations list" categorised as "independent" from the total number of females who had principal occupations.

in commerce (12,932) and domestic service (7,764) (Naikaku Tōkeikyoku 1934, pp. 40–49). Of the total number of young working women, however, the greater proportion were those engaged in domestic service. The 1930 census does not disaggregate the prefecture-level occupational structure by age at the district-level, but shows that in Akita Prefecture, of the female working population aged below 20, domestic service had the second largest number of workers (7,875), after those engaged in agriculture (24,761) (Naikaku Tōkeikyoku 1934, pp. 58–59). Accordingly, after agriculture, domestic service was a major occupation for young women.

Next, I outline how young women were employed as domestic servants. The 1920 census shows that in Akita Prefecture, 97.7% of female domestic servants were live-in servants (Naikaku Tōkeikyoku 1927, p. 60). They were divided into two groups by job. One, the minority, were wet nurses and nursemaids employed by wealthy families with infants. The other, the majority, were general servants hired to do housework such as "cooking, washing, or cleaning with dusters" (*Aikoku fujin*, 156, July 1908). Figure 2.3 shows the attributes, monthly wages, and employment durations of the domestic servants hired by the Nakada family between 1910 and 1915. Since this family had no infants during this period, all the workers seen here were female general servants.

According to Fig. 2.3, after 1911, the Nakada family hired a succession of new workers because most of them stayed with the family for only a few months or less. At that time, the Nakada family met with one tragedy after another, namely the death of the eldest son in 1911 and of the second eldest son and the family head in 1914. The coincidence of these tragedies with the turnover in workers suggests that the atmosphere in the household was uncomfortable, driving domestic servants to leave the family.

While the household situation in that period was unusual, domestic servants generally stayed in their employers' homes for at most several years. As Fig. 2.3 illustrates, the situation in 1910 reflects the normal length of employment. Suwa (no. 1) and Teru (no. 2) stayed with the Nakada family for approximately 15 months and three years, respectively. The reason for their limited stay is that, except for wet nurses, most general servants, including nursemaids, were unmarried young women, who worked as live-in servants for at most several years before marriage. Once married, they stayed at home as housewives. The 1930 census shows that in Akita Prefecture, 76.6% of female domestic servants were under age 20 (Naikaku Tōkeikyoku 1934, pp. 58–59). The 1920 census, which does not specify the number of workers by age, also indicates that in this prefecture, 87.5% of the women hired as live-in servants were unmarried (Naikaku Tōkeikyoku 1927, pp. 120–121). Figure 2.3, which does not specify the attributes of every worker due to a lack of data, does include a number of married women such as Unosuke's wife (no. 10), but this does not imply that most of the domestic servants hired by the Nakada family were married women. As Fig. 2.3 shows, a number of workers, such as Magoichi's third daughter (no. 17), can be identified by their attributes as unmarried women. This figure also includes a total of 12 workers whose ages were specified. Except for Iso (no. 39), aged 27, all were young women aged between their late teens and early twenties.

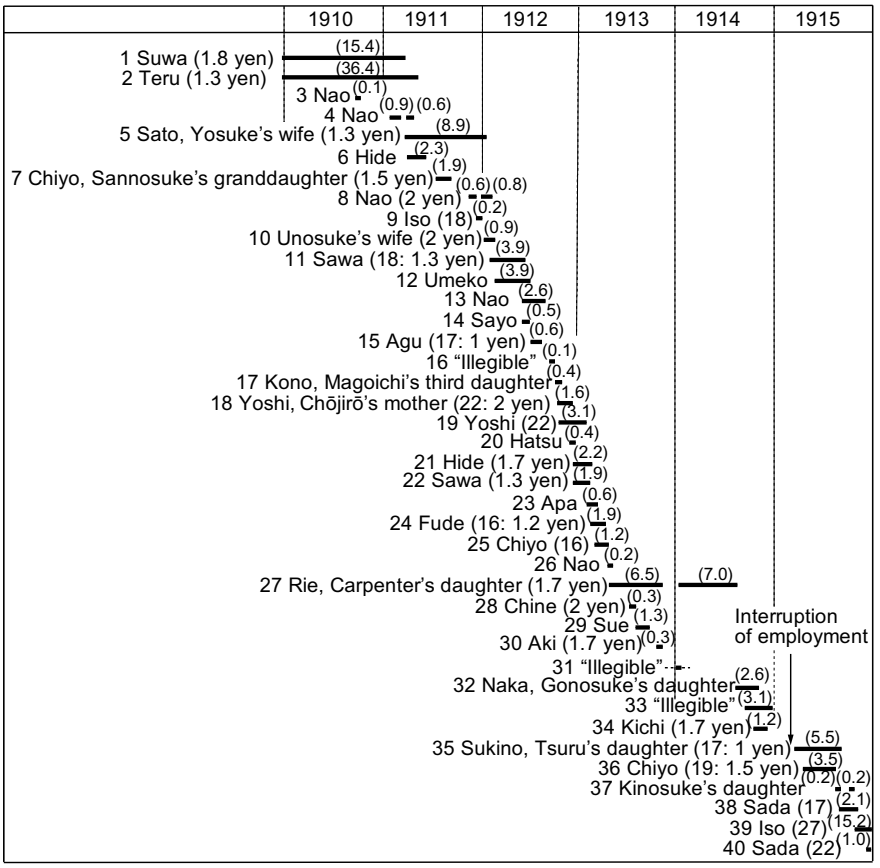

Fig. 2.3 Employment durations of the domestic servants hired by the Nakada family from 1910 to 1915. *Sources* KKS, Nakada-ke Monjo, no. 54a, no. 54b, and no. 55a
Notes The workers' numbers refer to the series of numbers I assigned to all the domestic servants, as noted in Fig. 2.2. The workers described as "illegible" denote those whose names are illegible in their records. Ages and monthly wages are in parentheses after the workers' names. I used the age at which each worker was employed. The bold line next to each worker represents her employment duration, expressed in months in the parenthesis. For "illegible" (no. 31), I added dotted lines at both ends of the bold line because her record specifies no exact length of employment

Moreover, Fig. 2.2, which does not cover every worker due to a lack of data, shows the locations of the homes of the domestic servants hired by the Nakada family from 1910 to 1924. As indicated here, this family recruited female workers mainly from the vicinity of Ōdate, which was farthest from the neighbouring districts. The Nakada family papers also include a number of records that refer to the channel through which domestic servants were hired. One such record shows that Nao (no. 26) "was introduced" to this family by a person named "Ishijiro" (Kokubungaku Kenkyū Shiryōkan [hereafter KKS], Nakada-ke Monjo, no. 55a). While the source

provides no detailed information on those who introduced workers to the employer, Nao's case implies that the Nakada family recruited domestic servants using various connections. Additionally, the records of this family reveal that domestic servants were from lower-class families. For example, Naka (no. 32), hired by the Nakada family in 1914, was from a tenant family that rented lands from the Nakada family (KKS, Nakada-ke Monjo, no. 42). According to the Nakada family's records on rent collection, Naka's father owed 18 yen to this family in 1906 (KKS, Nakada-ke Monjo, no. 42).

Finally, we turn to the wage payments of domestic servants. In northern Akita Prefecture, a domestic servant was paid a fixed monthly wage, but this wage was not paid every month because most domestic servants were live-in workers whose living costs were borne by their employers. Thus, a domestic servant required no regular wage payment. The Nakada family fixed the wage of a domestic servant as a monthly wage but only paid the wages in money form when needed at the request from the worker. For instance, the Nakada family paid 5 yen to Suwa (no. 1) on 2 October 1910 when she went home on leave (KKS, Nakada-ke Monjo, no. 55a). The case of Sada (no. 79), who stayed with the Nakada family in 1924, is also worth reporting. Her mother visited this family on 4 February 1924 and was paid 3.46 yen as part of her daughter's wages (KKS, Nakada-ke Monjo, no. 52). This was because unmarried young women were under the control of their parents and their wages were thus regarded as their family's income, not their own earnings. When a domestic servant left her position, her employer calculated the total wages owed her on the basis of her monthly wage and employment duration and then gave her the portion that had not yet been paid. For example, the Nakada family paid Suwa (no. 1) not only the rest of her wages, namely 1.06 yen, but also an allowance of 0.12 yen when she left their home on 10 March 1911 (KKS, Nakada-ke Monjo, no. 55a).

2.3 The Labour Supply Until the Early 1910s

In the early 1910s, the Nakada family underwent a succession of retirements of domestic servants. Nevertheless, it should be noted that this family succeeded in filling the vacancies that resulted. This was because the lower-class families who sent their daughters to work as domestic servants were suffering income shortages. Domestic service served as a significant source of income for such families.

A 1908 survey reports the budget of a peasant family "without any owned land" in Nishidate Village, located close to Ōdate (*Akita-ken nōkaihō*, 31, November 1910a). To obtain a figure for total income, the survey calculated the sum of income from farming, giving a monetary value to income in kind such as agricultural products, and other cash income. Since income and expenditures of farming and households were not treated separately in this family, the survey calculated the sum of farming and living costs as total expenditures. The result shows that total expenditures (347.122 yen) exceeded total income (331.008 yen), resulting in a budget deficit of 16.114 yen. The survey mentions that lower-class family members generally "did various

jobs away from home or worked as freight carriers" to cover such deficits, and that the family noted above obtained 37% of its total income from off-farm jobs such as "being hired as labourers or working away from home". Hence, in a lower-class family of this sort, parents had a daughter work as a domestic servant and then obtained her wages as part of their family income. Moreover, since the living costs of a domestic servant were borne by her employer, her parents could reduce their household expenses by that portion, which thus constituted additional income.

The daughter who was to be sent as a domestic servant existed as a surplus worker in her family. A peasant family would expect no increase in income if such a surplus worker stayed within the household to help her family members with existing jobs such as farming. Domestic service provided surplus workers with the opportunity to bring more income into the family, but they had other income-earning options available to them as well.

In the early 1910s, young women in northern Akita Prefecture did not yet have the choice to migrate outside the region. Even surplus female workers could, however, add to their families' incomes by making items from straw or working as day labourers. The production of items such as straw mats or rope using rice straw was "the most important by-employment" for peasant families in northern Akita prefecture (*Akita-ken nōkaihō*, 31, November 1910b). A 1908 survey reports that in northern Akita Prefecture, 43.6% of farming families were engaged in straw-work to earn income (Akita-ken Nōkai 1910, pp. 3–29). Moreover, in this region, a large number of men and women worked as day labourers, mainly in farming. Since such day labourers did not live with their employers, they were recruited from the areas neighbouring their employers' homes. Thus, we can compare the number of day labourers in this region with that of the working population in the same area. A 1919 survey indicates that a total of 24,004 women were hired as daily agricultural labourers in northern Akita Prefecture (Akita-ken 1920). According to the 1920 census, the same region had a total of 130,674 female workers (Naikaku Tōkeikyoku 1927, pp. 24–41).[3] Accordingly, in this area, approximately one fifth of total female workers (130,674) were female day labourers (24,004).

Nevertheless, young women could not obtain as much income from straw-work and day labour as from domestic service. This difference in income explains why lower-class families had daughters work as domestic servants. What follows is an examination of the case of Ōdate and its neighbouring areas, based on which I estimate how much income a peasant family would gain by sending a daughter to work as a domestic servant and compare it with calculations of how much would be gained by the daughter's making straw products or working as a day labourer.

First is the case of domestic service. Akita Prefecture's statistical yearbooks list each year's wage levels for domestic servants. According to these data, in 1912, "the highest" monthly wage of a female general servant in Ōdate was 2 yen, "the average" was 1.5 yen, and "the lowest" was 1 yen (Akita-ken 1912–1925, 1912 version). The Nakada family records show that these differences in wages were related to the

[3] I obtained the total number of female workers by subtracting females classified as "independent" in the list of principal occupations from the entire female population with principal occupations.

workers' ages. The monthly wages of Yoshi (no. 18), Sawa (no. 11), and Agu (no. 15), who all stayed with this family in 1912 (Fig. 2.3), were 2 yen, 1.3 yen, and 1 yen, respectively (KKS, Nakada-ke Monjo, no. 55a). Their monthly wages corresponded to the wage levels in Ōdate. Since Yoshi, Sawa, and Agu were aged 22, 18, and 17 respectively, their wage levels had a positive correlation with their ages. It is clear that Yoshi, with the highest wage, had housework experience as a housewife because the employer referred to her as "Chōjirō's mother". This case implies that high wages were offered to older workers with housework experience, and low wages to inexperienced younger workers. Consider that a daughter with poor housework experience was hired as a domestic servant. If her monthly wage was at the lowest level of 1 yen, her wages would amount to 12 yen a year.

Moreover, parents whose daughters became live-in servants could reduce their household expenses and retain the surplus as additional income. Since a lower-class family spent the greatest part of its income on food, total food expenses serve as a clue to estimating the living costs of a daughter from a lower-class family. The survey of a peasant family in Nishidate Village, noted above, reports that of the family's total living costs, defined as the sum of "food costs", "clothes costs", and "housing costs", "food costs" accounted for 82.8% (*Akita-ken nōkaihō*, 31, November 1910a).

In this context, it is useful to consider the case of workers in the cotton-spinning industry. In industrialising Japan, cotton-spinning mills recruited young women from lower-class families and boarded them in dormitories. In the early 1910s, such mills generally collected approximately 0.09 yen per diem from female boarders for food expenses (Hosoi 1925, p. 202). Cotton-spinning mills, though located in urban areas with relatively high living costs, used cheap imported rice and thereby could reduce the costs of boarding female workers (Hosoi 1925, p. 193). Thus, the 0.09 yen-per-diem figure serves as a substitute for the living costs of a young woman from a lower-class family in northern Akita Prefecture. By multiplying 0.09 yen by 365 days, I estimate the annual living costs of a young woman at 32.85 yen, the income her parents would gain by sending a daughter out as a live-in servant. If the entire 12 yen of domestic servant wages was all included in her family's income, her parents could increase their family income by 44.85 yen, the sum of 12 yen and 32.85 yen, a year.

Next, I estimate how much income a young woman could obtain by making straw items and working as a day labourer. Despite being a significant by-employment, the production of straw items was a minor source of income for peasant families. A survey conducted in 1908 reports that in Kita-Akita District (Fig. 2.2), where Ōdate was located, the average income from straw-work per household was 3.274 yen a year (Akita-ken Nōkai 1910, pp. 3–5). However, a peasant family could obtain more income by having a daughter work as a day labourer. A day labourer was paid a wage in return for a daily job. Given the number of days worked and the level of a daily wage, we can estimate the income of a day labourer.

The number of days worked is obtained from a 1922 survey of the income of each household in Higashidate Village, located close to Ōdate (Ōdate Shiyakusho Hinai Sōgō Shisho, Hinai chōshi hensan shiryō, Shotoku chōsabo Higashidate-mura yakuba). This survey also lists the number of day labourer days per year worked by

each family member. Based on this source, Fig. 2.4 illustrates the distribution of the number of days worked as day labourers by the female members of each household in Higashidate Village in 1922. As this figure shows, the largest group consisted of eight workers who worked 100 days each. The second and third largest groups were those with five workers working 50 days each and three workers working 150 days each. Conversely, only four workers in total worked more than 150 days. These findings imply that female household members in general were hired as day labourers for at most a total of 150 days a year.

The demand for day labourers varied by season due to seasonal changes in demand in farm labour. Except for certain cases, however, the workers in Fig. 2.4 were paid a fixed wage of 0.36 yen for a daily job. The reason for this is that each of these workers had a close relationship with a particular employer and hence was preferentially offered daily jobs by that employer (Fukutake 1978). A day labourer of this type was given a fixed wage rate throughout the year. The Nakada family employed this type of day labourer. For example, in 1922, a woman called "Yosuke's elder sister" was hired for a total of 67.5 days, for which 0.35 yen per diem was paid throughout the year (KKS, Nakada-ke Monjo, no. 54d).

The wage level of this type of worker was lower than that of day labourers who were hired on an occasional basis. On 22 November 1922, the Nakada family temporarily employed a woman as a day labourer and gave her 0.7 yen in return for the job of washing Japanese radishes (KKS, Nakada-ke Monjo, no. 54d). As these cases

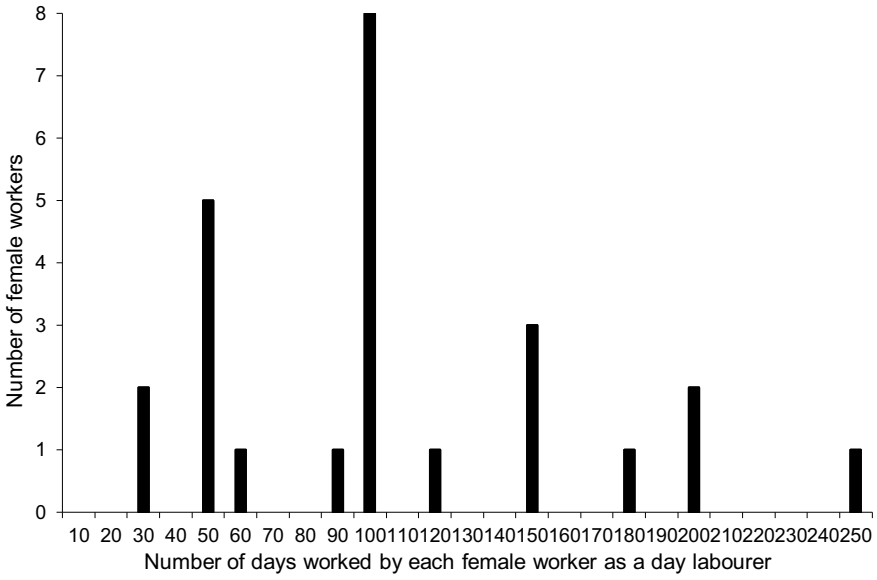

Fig. 2.4 Distribution of the number of days worked by female day labourers. *Source* Ōdate Shiyakusho Hinai Sōgō Shisho, Hinai chōshi hensan shiryō, Shotoku chōsabo Higashidate-mura yakuba

Note The source omitted a fraction of the number of days worked by each worker

indicate, a wealthy family that required day labourers gave preference to hiring those with a close relationship with the family. Instead of offering frequent opportunities for work, the employer paid a lower daily wage to such workers than those hired on a temporary basis. In 1911, the Nakada family paid a woman called "Yosuke's mother" a daily wage of 0.15 yen: she had a close relationship with this family and was hired as a day labourer (KKS, Nakada-ke Monjo, no. 54a). If a young woman was hired as a day labourer for a total of 150 days a year at a daily wage of 0.15 yen, her annual income from the job would total 22.5 yen.

Day labourers were also provided with meals by their employers, as payments in kind. Thus, peasant families whose daughters worked as day labourers could reduce their expenditures on food. None of the sources offer specific details on day labourers' meals. For comparative purposes, therefore, let us consider a young woman hired as a day labourer and offered every meal from breakfast to supper. Based on the domestic service figures, the food expenses of a female day labourer are estimated at 0.09 yen per diem. Given 150 days worked a year, her parents would reduce their household expenses (thereby gaining income) by 13.5 yen a year. The 13.5 yen total is added to the 22.5 yen total in wages noted above. Moreover, if a young woman earned 3.274 yen, the average annual income from straw-item production per household, this income can also be included in this estimates total. Thus, by having a daughter make straw items and work as a day labourer, a peasant family would expect an increase in income of 39.274 yen a year. This is an overestimate, however, because day labourers probably had breakfast and supper at their homes. Nevertheless, the 39.274 yen total is lower than the 44.85 yen in annual income a peasant family could obtain by sending a daughter out as a domestic servant. In addition, that 44.85 yen total for domestic service work is an estimate based on the lowest monthly wage. This difference in income explains why the Nakada family was able to recruit a succession of new workers. To obtain more income, peasant families chose to send daughters to work as domestic servants rather than have them work as day labourers and make straw items at home.

2.4 Transformation of the Labour Supply from the Late 1910s to the Early 1920s

2.4.1 Outflow of Labour

From the late 1910s to the early 1920s, however, the labour market in northern Akita Prefecture underwent a transformation. I begin by outlining how the labour outflow from this area expanded due to the economic boom of the First World War. For analysis, I focus on each year's net outflow of labour from this region, defined as the difference between the numbers of residents who migrated into and away from this area in each year. Census data enable us to calculate an annual net outflow of labour

after the first census was conducted in 1920. To estimate the pre-1920 outflow, I used data on temporary residents.

At that time, Japanese people officially registered in the places where they resided as permanent residents. When they left these places for 90 days or more, they were required to register the places where they were staying as temporary residents. Official data on temporary residents together with other statistical sources enable us to estimate that in northern Akita Prefecture, the average annual net outflow of women aged 15–19 was 170 between 1910 to 1915 but that, due to the economic boom, this figure jumped to 728 in the years from 1916 to 1920 (Appendix 1). According to census data, the average annual net outflow of women aged 15–19 increased to 1,263 between 1920 and 1930.[4] This was because the textile factories in metropolitan areas around Tokyo began to recruit a growing number of young women from northern Akita Prefecture. In this region, women mainly migrated to areas outside the prefecture. At the end of 1920, in northern Akita Prefecture, the ratio of females who had migrated outside this prefecture to those who had migrated from one Akita district to another was highest in Yuri District (Fig. 2.2), that is at 4.99, and was 1.58 even in Kita-Akita District where it was lowest (Akita-ken 1912–1925, 1920 version). Chūō Shokugyō Shōkai Jimukyoku (1927), an investigation conducted in 1925, also reports that of the female workers who had migrated from Akita Prefecture to somewhere outside the prefecture for work, "the industrial and mining sectors", including "the spinning and weaving industry", accounted for the greatest portion (59.3%), and that 78.0% of them resided in Tokyo and Kanagawa Prefectures (Fig. 2.1).

In northern Akita Prefecture, however, the outflow of labour had a limited impact on the labour market because the number of young people had expanded since the early 1910s due to an increase in the fertility rate. The 1920 census shows that in northern Akita Prefecture, women aged 15–19 numbered 33,939, meaning the number of women at each age in this cohort is estimated at one-fifth that, 6,788. The cohort aged 6 to 14, however, numbered 75,718 (Naikaku Tōkeikyoku 1927, pp. 8–17), with the number of girls at each age reaching 8,414. Absent any labour outflow or any reduction by death, the number of women aged 15–19 in this region would have increased by 1,626 annually, the difference between 8,414 and 6,788. Meanwhile, the average annual net outflow of women aged 15–19 was 1,263 between 1920 and 1930. Thus, despite the increased outflow of labour, the number of young women in this region grew throughout the 1920s. The increased numbers in the younger generations led to an increase in the labour force. In northern Akita Prefecture, the female workforce, defined as the female cohort aged 15–59, expanded from 191,864 to 208,466 between 1920 and 1930 (Naikaku Tōkeikyoku 1927, pp. 8–17; Naikaku Tōkeikyoku 1934, pp. 8–17). These findings allow us to reject the view that a reduction in working population caused by labour outflow reduced the surplus

[4]In this region, the number of women aged 15–19 expanded from 33,939 to 37,561 between 1920 and 1930 (Naikaku Tōkeikyoku 1927, pp. 8–17; Naikaku Tōkeikyoku 1934, pp. 8–17). Thus, this cohort increased, on average, by 363 a year during this period. As noted below in this section, without any labour outflow, the number of women aged 15–19 in this region would have expanded by 1,626 a year. I estimated the average annual net outflow at 1,263 by subtracting 363 from 1,626.

of labour and hence led to an increase in the marginal labour productivity of the agricultural sector.

2.4.2 Agricultural Growth

In this context, I explain that in northern Akita Prefecture, agricultural growth had a great impact on the labour supplied by peasant families. The mainstay of farming in this region was rice production. In northern Akita Prefecture, paddy field area accounted for 74.1% of total arable land in 1920. That year, rice also reached 75.4% of total agricultural production comprising crops, silk cocoons, and livestock, as measured in monetary value (Akita-ken 1912–1925, 1920 version). Since total arable land hardly expanded in industrialising Japan except in Hokkaidō (Fig. 2.1), the rice yield serves as an indicator of how agricultural productivity in northern Akita Prefecture improved over time. Table 2.1 lists rice yields from 1910 to 1924 in this region. As this table indicates, the rice yields were showing an increasing trend in the 1910s despite fluctuations. Rice yields remained higher in the first half of the 1920s than in the early 1910s because the range of fluctuations in yield decreased. Consequently, the average yield of 2.71 metric tons per hectare (hereafter t/ha) from 1921 to 1923 was greater by 26.6% than that of 2.14 t/ha of 1910 to 1912.

The increase in rice yield resulted from the following improvements in farming. In northern Akita Prefecture, peasants improved paddy field drainage by digging ditches and laying buried pipes, because keeping paddy fields dry in the winter promotes the decomposition of organic matter in the soil and thereby makes lands more fertile. Thus, between the 1910s and the 1920s, a growing area of paddy fields had facilities for drainage. Meanwhile, new fertile varieties of rice, suitable for paddy fields with drainage facilities, also spread in this region (Katsube 2002).

These technological improvements led to an increase in agricultural productivity without any increase in labour input. The statistical yearbooks of Akita Prefecture list data on the number of workers in the agricultural sector up until 1920. These data show that in northern Akita Prefecture, the sum of male and female workers in this sector decreased slightly from 336,048 to 318,379 between 1911 and 1920 (Akita-ken 1912–1925, 1911 and 1920 versions). Thereafter, according to censuses, the number remained almost unchanged from 224,084 to 222,215 between 1920 and 1930 (Naikaku Tōkeikyoku 1927, pp. 24–41; Naikaku Tōkeikyoku 1934, pp. 40–49). The difference in numbers between the sources originates from the gap between them in the coverage of workers. The 1920 and 1930 censuses list the number of workers engaged mainly in farming, whereas the statistical yearbooks report the total number of people engaged principally in agricultural work and those members of peasant families who helped with farming only in busy seasons. These two series of data, although impossible to compare with each other, indicate that the number of workers in the agricultural sector decreased slightly or remained stagnant between the 1910s and the 1920s.

Table 2.1 Rice yield, living-cost index, and monthly wage of a female general servant

Year	Rice yield in northern Akita Prefecture (metric tons per hectare)	Living-cost index in northern Akita Prefecture (1910 = 100)	Monthly wage of a female general servant in Ōdate (yen)
1910	2.12 (100)	100	1.5
1911	2.16 (102)	123.0	1.5
1912	2.15 (101)	140.8	1.5
1913	1.54 (73)	144.5	1.0
1914	2.59 (122)	122.6	1.5
1915	2.50 (118)	109.3	1.5
1916	2.57 (121)	113.9	1.5
1917	2.04 (96)	153.6	1.5
1918	2.37 (112)	228.0	1.5, 2.5
1919	2.56 (121)	315.9	2.5, 7.0
1920	2.96 (140)	317.4	4.0
1921	2.74 (129)	257.7	4.0
1922	2.69 (127)	279.6	18.0
1923	2.69 (127)	275.2	15.0
1924	2.95 (139)	305.9	15.0

Sources For rice yields and monthly wages, Akita-ken (1912–1925), 1910–1924 versions. For the living-cost index, Appendix 2

Notes To calculate rice yields, I excluded the production of glutinous rice. The indices for rice yields are in parentheses. I listed the sum of monthly wage and meal costs after 1922. Until 1920, the sources specify monthly wages by the quarter. Except for 1918 and 1919, however, the monthly wages for each year remained constant throughout the year. For 1918 and 1919, this table shows monthly wages in March (left) and December (right). For years in which the sources specify the highest, average, and lowest monthly wages, I used the average

Given these figures, it is evident that the improvement in agricultural productivity led to an increase in the incomes of lower-class families. To illustrate, I estimate how much income a peasant family cultivating tenanted lands could obtain from the increase in rice yield. To analyse the budget of such a family, I distinguish its management side from its household side. First, I focus on the management side. For a peasant family, the costs of input goods purchased for farming, such as fertilisers, were included among expenditures listed on the management side. In Akita Prefecture, however, peasants were mostly self-sufficient in the acquisition of fertiliser, using manure made of rice straw and purchasing only small amounts of fertiliser.[5] Moreover, most peasants relied on family labour and paid no wages

[5]Nōrinshō (1930), a survey on the use of fertilisers, reports that as late as 1927, in Akita Prefecture, the average consumption of self-produced fertilisers per hectare, valued on a monetary basis, was 80.972 yen, whereas fertilisers purchased came to only 7.865 yen. The source converted the consumption of self-produced fertilisers into a monetary value as follows (Nōrinshō 1974, p. 3). It fixed the price of each nutrient, such as nitrogen, using fertiliser prices, multiplied the amount of

to their family members. Instead, such family members were provided with daily necessities, such as meals, as payments in kind. Thus, labour costs were included in the expenditure list on the household side, not the management side. Since the improvement in agricultural productivity required no additional labour input, peasant families that relied on family labour could increase their rice yield without hiring workers. Accordingly, for a peasant family cultivating tenanted lands, rent payments accounted for the largest portion of total expenditures on the management side.

Nevertheless, peasants were not burdened with the payment of rents. This is supported by two surveys on rice production in tenanted lands, which were conducted at two close points in northern Akita Prefecture located in western Kawabe District and a suburb of Akita City (Fig. 2.2), in 1908 and 1920, respectively (*Akita-ken nōkaihō*, 30, September 1910; *Akita-ken nōkaihō*, 106, March 1921). The results of the two can be compared because both surveys made the same enquiries and both investigated fertile lands whose rice yields were 2.72 t/ha in 1908 and 3.78 t/ha in 1920. Each of the surveys reports the income and expenditure of rice production per *tan*, a Japanese unit of area (991.7 m^2), giving a monetary value to incomes and expenditures in kind. In both surveys, income is the total of the value of harvested rice and by-products such as rice straw. Expenditures are comprised of the costs of rent, labour, and input goods. Given, however, that peasants who relied on family labour paid no wages and that they also did not pay for self-produced fertilisers such as manure, we can calculate the surplus from rice production on the management side by subtracting the costs of rent and purchased input goods from total income. In a peasant family, this surplus on the management side was transferred to the household side and used to support the family members. Therefore, an increase in the surplus from rice production led to an increase in income on the household side.

The two surveys on rice production enable us to estimate that the surplus came to 39.6% of total income per *tan* in 1908 and 50.7% in 1920.[6] The rent rates differed in the two cases, however. In Akita Prefecture, rents for paddy fields were paid in rice. According to the two surveys, 55.6% of harvested rice per *tan* was paid as rent in 1908 but only 48.0% in 1920. Other surveys on tenant farming in Akita Prefecture show that the average portion of harvested rice in fertile lands paid as rents was 54.5% and 54.8% during the periods of 1908–1912 and 1916–1920, respectively (Nōrinshō 1926a, p. 16; Nōrinshō 1926b, p. 65). The rent rate of 48.0% in 1920, noted above, was lower than the average rate. Hence, if the rent rate of 55.6% in 1908 is substituted for that in the survey in 1920, the surplus would account for 43.9% of total income in 1920. In this case, the surplus proportion of 43.9% approximates that of 39.6% in 1908.

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each nutrient by its price, and aggregated the monetary value obtained for each nutrient. Since the monetary value of self-produced fertilisers consumed per hectare was far greater than that of the fertilisers purchased, it is clear that the supply of nutrients to farming mainly depended on the use of self-produced fertilisers such as manure.

[6]The 1920 survey lists the types of fertilisers and the quantity of consumption of each, but it includes only the monetary value of the total consumption of fertilisers. Thus, I distinguished the costs of fertilisers purchased from the monetary value of self-produced fertilisers using the price of each nutrient (see note 5).

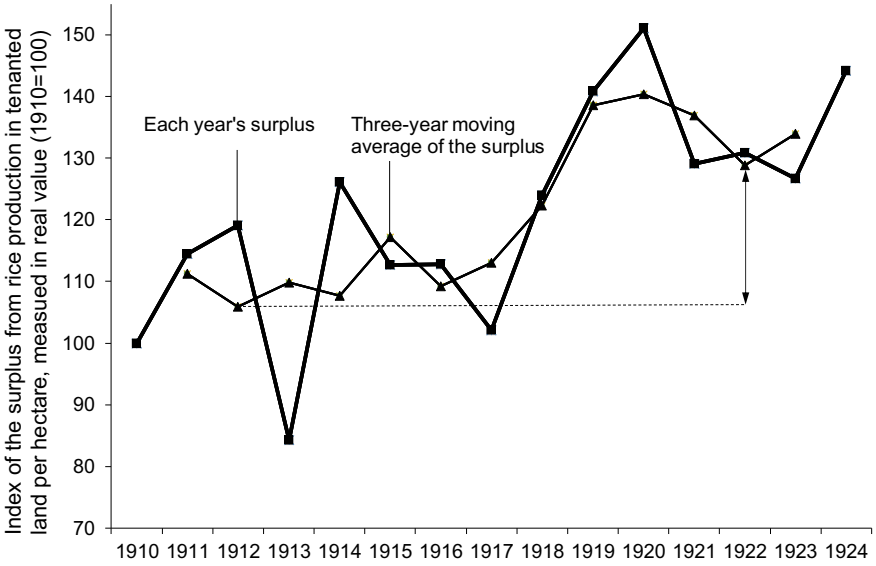

Fig. 2.5 Surplus from rice production in tenanted land per hectare. *Sources* For rice yields and rice prices, Akita-ken (1912–1925), 1910–1924 versions. For the living-cost index, Appendix 2

Thus, I estimated the surplus from rice production per hectare on tenanted land on the assumption that the surplus accounted for a fixed proportion of the total income from rice production. I calculated the income from rice production by multiplying the rice yield in Table 2.1 by the annual average price of brown rice in Akita City (Akita-ken 1912–1925, 1910–1924 versions). Then, I obtained the surplus by multiplying the income by the surplus proportion of 39.6%. Finally, to remove the effects of price changes, I deflated the surplus by the living-cost index in Table 2.1, which was estimated on the basis of the living costs of a lower-class family in northern Akita Prefecture. Figure 2.5 illustrates the result. Since the surplus of each year still fluctuated due to rich and poor harvests or changes in rice price, I plotted the three-year moving average of the surplus as well as the surplus of each year. As this figure shows, the surplus in rice production on tenanted land rapidly expanded in the late 1910s. If we compare the three-year moving averages of 1912 and 1922, the surplus from rice production in tenanted land, measured in real value, increased by 21.6% as marked with an arrow in Fig. 2.5.

2.4.3 Labour Shortage of Domestic Servants

Agricultural growth in northern Akita Prefecture had a major impact on the labour supply of domestic servants, with the result that employers of domestic servants

experienced severe labour shortages and hence increased monthly wages to recruit workers.

Based on official statistics, I outline the responses of employers of domestic servants. Using the statistical yearbooks of Akita Prefecture, Table 2.1, noted above, lists the monthly wages of a female general servant in Ōdate between 1910 and 1924. As this table shows, there was a gap in monthly wage between 1921 and 1922 because until 1921, the sources list only the monthly wage, but after 1922, they list the sum of the monthly wage and the monthly cost of the provided meals. By noting this difference, we can examine how the employment conditions of a domestic servant improved over time. The monthly wage of a female general servant in Ōdate remained 1.5 yen until March 1918. It jumped to 7 yen in December 1919 but declined to 4 yen in 1920. Subsequently, the sum of her monthly wage and meal costs amounted to 18 yen in 1922 but decreased to 15 yen in 1923. The daily cost of meals provided for a domestic servant in the early 1910s is estimated at 0.09 yen. The monthly cost of her meals, obtained by multiplying 0.09 yen by 30 days, would be 2.7 yen. The sum of 2.7 yen and 1.5 yen, the monthly wage of a female general servant until March 1918, was 4.2 yen, but the total of her monthly wage and meal costs in 1923 and 1924 was 3.57 times larger than that, at 15 yen. Between the periods of 1912–1915 and 1921–1924, the average living-cost index in northern Akita Prefecture, as calculated using the index in Table 2.1, rose by only 2.16 times. Therefore, the sum of the monthly wage and meal costs of a female general servant increased faster than the living-cost index.

Moreover, the statistical yearbooks of Akita Prefecture list the monthly wages of female general servants in Akita City and seven major towns, representing each district in northern Akita Prefecture (Fig. 2.2). These data are also inconsistent in their coverage of meal costs. Thus, using the statistical yearbooks, I estimated the sum of the monthly wage and meal costs of a female general servant in each of the places noted above in the same manner as described above. For Akita City, Tsuchizaki, and Ushijima, however, I considered the monthly cost of meals in the early 1910s to be 5 yen, which was obtained using the same sources. Then, I deflated the total monthly wages and meal costs by the living-cost index in Table 2.1, but the figures obtained still fluctuate due to the price changes of the late 1910s. Hence, using the deflated figure in each year, I calculated the three-year moving average between 1922 and 1924 as a benchmark. Similarly, I obtained the three-year moving average for the period before 1916. Figure 2.6 illustrates the result. It demonstrates that except for Kosaka, the sum of the monthly wage and meal costs of a female general servant, measured in real value, increased in every district from the early 1910s to the early 1920s.

In the late 1910s however, Japanese people enjoyed an overall improvement in the standard of living due to the economic boom of the First World War, which led in turn to a sharp increase in living expenses (Ohkawa et al. 1974). This raises the question of whether the increase in the domestic servant's total monthly wage and meal costs could be attributed to an increase in meal costs. In this context, I focus on the case of domestic servants hired by the Nakada Family and show that the improvement in the employment conditions of domestic servants resulted mainly

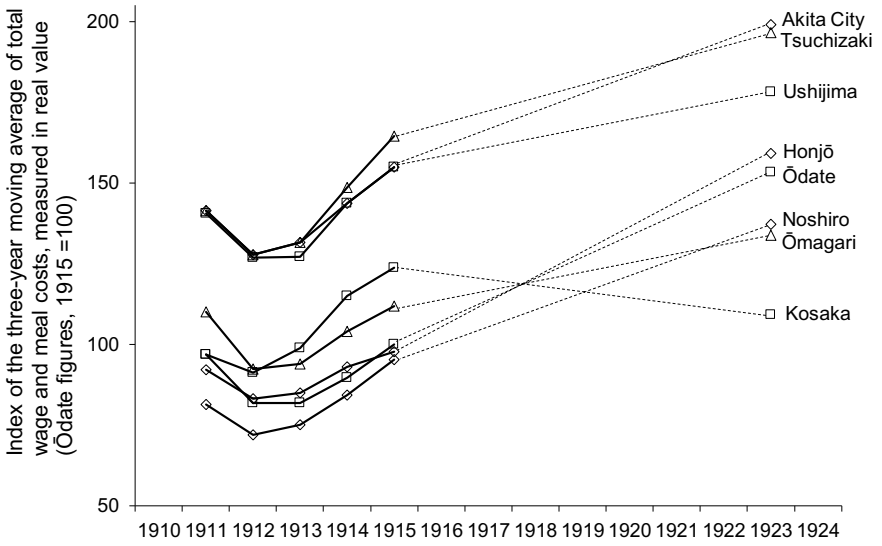

Fig. 2.6 Sum of the monthly wage and meal costs of a female general servant. *Sources* For monthly wages, Akita-ken (1912–1925), 1910–1916 and 1922–1924 versions. For the living-cost index, Appendix 2
Notes For the indices of Akita City and Tsuchizaki in 1923, I used the average of the figures in 1923 and 1924 due to a lack of data for 1922. For the location of each place, see Fig. 2.2

from a sharp increase in monthly wages, rather than an increase in meal costs. Since employers of live-in servants bore the meal costs of the workers as part of their household expenses, the workers were not informed of their meal costs. Conversely, faced with labour shortages, employers of domestic servants offered higher wages to recruit workers. Thus, an increase in monthly wage, rather than meal costs, had a great impact on the choices young women made regarding jobs. The records of the Nakada family enable us to analyse how the monthly wages of domestic servants changed over time. Moreover, the employment durations of domestic servants hired by this family reveal how the employer was induced by severe labour shortages to raise their monthly wages.

Figure 2.7 illustrates the employment durations of domestic servants hired by the Nakada family between 1916 and 1924. Due to a lack of sources, we cannot trace these figures after 1925. As seen in Fig. 2.7, a number of nursemaids were hired after 1921 due to the birth of the family head's grandson, but all the workers except for the nursemaids were female general servants. Between 1916 and 1924, unlike the early 1910s, this family had no special conditions that would be uncomfortable to workers. Nevertheless, most of the domestic servants left this family within a short period. A considerable number of workers retired in less than one month. Meanwhile, the Nakada family still offered workers monthly rather than daily wages. In other words, the family recruited surplus female workers and expected them to stay for several years, but ultimately failed to retain them.

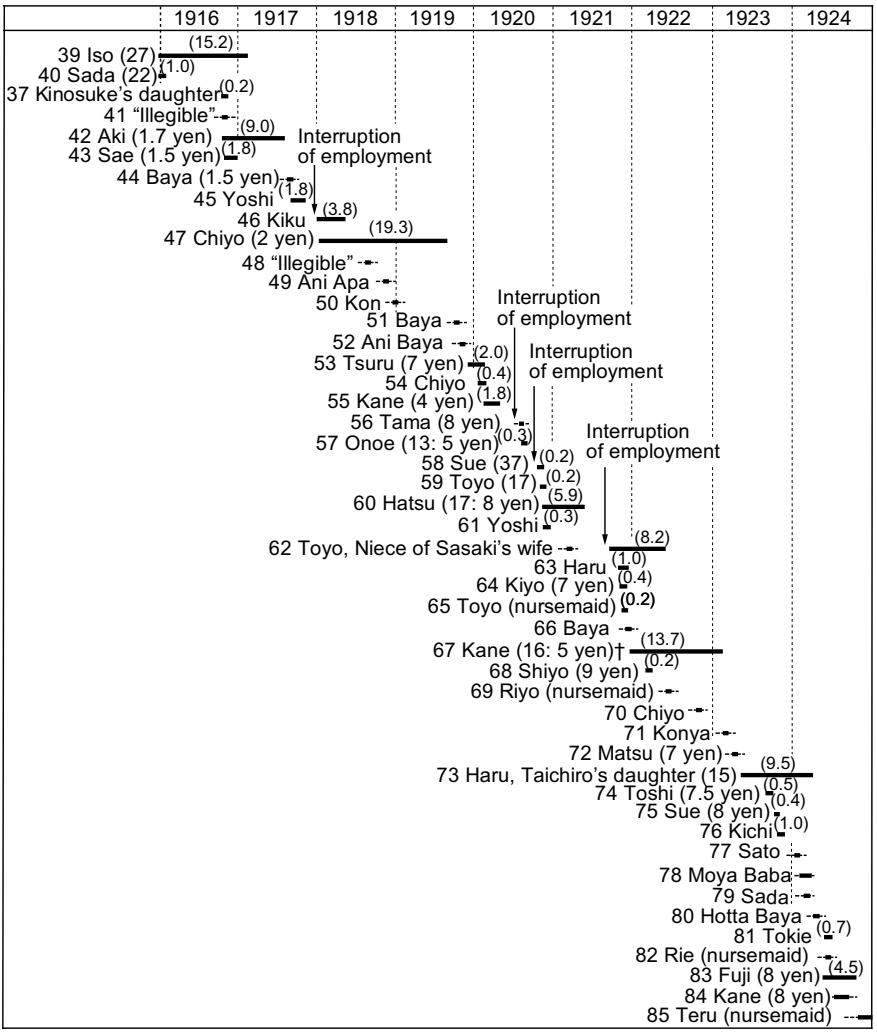

Fig. 2.7 Employment durations of the domestic servants hired by the Nakada family from 1916 to 1924. *Sources* KKS, Nakada-ke Monjo, no. 52, no. 54b, no. 54c, no. 54d, and no. 55b
Notes Same as for Fig. 2.3. †Kane (no. 67) was hired as a nursemaid, but her status was changed to general servant during her employment. Thus, I used the monthly wage given to Kane as a general servant

The Nakada family records do not specify the monthly wage of every worker, but they do reveal how the monthly wages of domestic servants changed over time. Using the available data, Fig. 2.8 illustrates the distribution of monthly wages that the Nakada family offered to its hired domestic servants. In this figure, the monthly wages of each worker are deflated by the living-cost index in Table 2.1. The figures plotted for Suwa (no. 1) and Teru (no. 2) are from 1910, and that for Kane (no. 67) is 1923, when she retired her position as a general servant. Excepting these three cases, the figures for all the other workers are plotted for the year in which they were employed.

Figure 2.8 shows that the distribution of these monthly wages, expressed in real value, shifted upwards after 1919. Since the Nakada family offered higher monthly wages in proportion to workers' ages, the ages of the domestic servants are included in Fig. 2.8. A dotted line connects the monthly wages of 17-year-old workers. According to Fig. 2.8, Agu (no. 15) in 1912 and Sukino (no. 35) in 1915, both aged 17, were given a monthly wage of 1 yen. There was only a slight difference, even in real value, between their monthly wages. This was the period when the Nakada family was experiencing frequent turnover in workers, but the cases of Agu and Sukino indicate that the family filled vacancies without offering higher monthly wages. In contrast, Hatsu (no. 60) in 1920 was offered a monthly wage of 8 yen, which was 3.55 times the real value of Agu's monthly wage of 1 yen. The case of Onoe (no. 57) in 1920 also merits analysis. Since she was aged 13, her monthly wage, expressed in real value, was at the low end of the distribution of monthly wages before 1918.

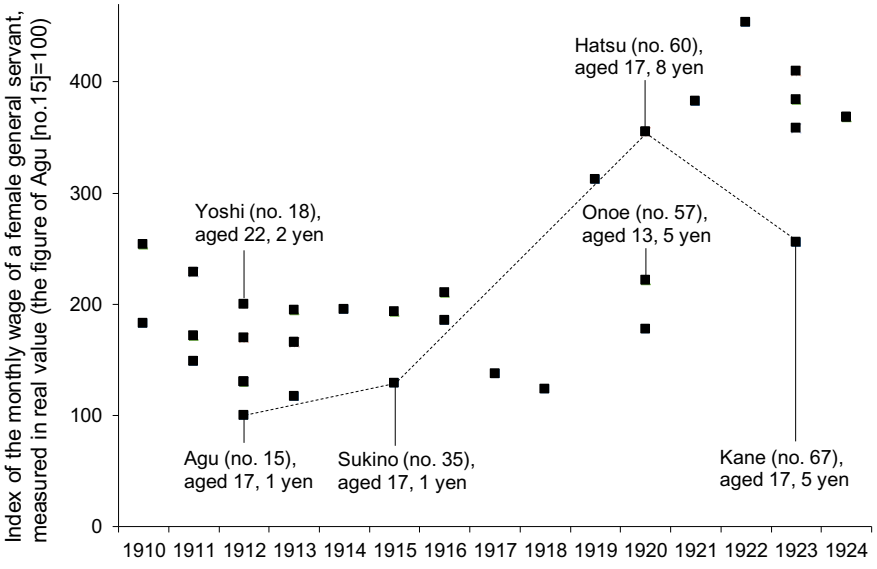

Fig. 2.8 Monthly wages of the domestic servants hired by the Nakada family. *Sources* For monthly wages, see Figs. 2.3 and 2.7 sources. For the living-cost index, Appendix 2
Note The monthly wage of each worker is expressed in nominal values

Nevertheless, Onoe was given a slightly higher monthly wage than Yoshi (no. 18), aged 22, in 1912. In 1920, the Nakada family suffered from severe labour shortages and twice failed to fill vacancies (Fig. 2.7). Hence, this family offered higher monthly wages to recruit workers.

The increased monthly wages changed the behaviour of the domestic servants hired by the Nakada family. Figure 2.7 shows that after 1922, this family never failed to fill vacancies despite successive retirements of workers. These conditions enabled the employer to recruit workers at a relatively lower wage. According to Fig. 2.8, Hatsu (no. 60) in 1920, aged 17, was given a monthly wage of 8 yen, but Kane (no. 67) in 1923, aged 17, was offered a lower monthly wage of 5 yen. Nevertheless, the real value of Kane's monthly wage of 5 yen was 2.56 times greater than that of a monthly wage of 1 yen offered to Agu (no. 15) in 1912.

The labour shortages of domestic servants resulted from an improvement in agricultural productivity. To explain this relationship, I show the tendency of northern Akita peasant families to expand their cultivated lands from the late 1910s to the 1920s. In this region, between 1914 and 1924, the number of farming families with the farm size of less than 0.5 hectares decreased from 16,791 to 15,152, but the numbers of those with between 0.5 and 1.0 hectare and 1.0 and 2.0 hectares increased from 15,066 to 15,404 and from 15,877 to 22,291, respectively. Moreover, in the same area, the number of farming families with farms of 5.0 or more hectares, which landlords cultivated using hired labour, declined from 1,078 to 565 during this period (*Akita-ken nōkaihō*, 49, May 1915; Akita-ken 1912–1925, 1924 version). In this region, the total area of arable land remained almost unchanged from 106,668 to 107,596 hectares during these same years (Akita-ken 1912–1925, 1914–1924 versions). These findings indicate that large-sized farmers reduced their lands by renting out portions to tenant families. Consequently, by expanding their farm size for rice production using surplus labour within their households, peasant families could obtain almost the same amount of income as by having their surplus family members work as domestic servants.

To illustrate, I focused on the 1908 survey of a peasant family in Nishidate Village, noted in Sect. 2.3 (*Akita-ken nōkaihō*, 31, November 1910a). According to the survey, this family had no land and rented 0.79 hectares of land, while off-farm income accounted for 37% of the family's total income. While the source does not specify any details on the off-farm income, we can estimate how much income this family could have obtained from domestic service. The monthly wage of a female general servant in Ōdate was 1.5 yen in 1910 (Table 2.1). The food expenses of 0.09 yen per diem serve as a young woman's daily living costs at that time. These data enable us to estimate that the peasant family would obtain a maximum in a year of 50.85 yen, the sum of her monthly wages and living costs, by sending a daughter to work as a domestic servant. In the same manner as for Fig. 2.5, I also calculated how much surplus this family obtained from rice production on 0.79 hectares of tenanted land. Based on the average rice yield from 1910 to 1912 (Table 2.1), the annual surplus from the tenanted land is estimated at 72.027 yen. Thus, the peasant family would obtain a total of 122.877 yen a year, the sum of the surplus from rice production and the income from domestic service.

However, the same peasant family could have a surplus female worker stay within the household and thereby expand its farm size using the surplus labour. Two surveys conducted in 1925 on farm management in Akita Prefecture enable us to estimate that a peasant family using the labour of a full-fledged female worker was able to increase its arable land for rice production by approximately 0.40 hectares (Akita-ken Nōkai 1927). Thus, by having a daughter work on a farm instead of sending her out as a domestic servant, the peasant family could rent additional land of 0.40 hectares, thereby expanding its cultivated land from 0.79 to 1.19 hectares. Hence, I calculated the surplus from rice production in 1.19 hectares of land in the same manner as for Fig. 2.5. Based on the average rice yield from 1921 to 1923 (Table 2.1), the annual surplus from rice production is estimated at 277.124 yen. The average living-cost index during the periods of 1910–1912 and 1921–1923, as calculated using the data in Table 2.1, increased by 2.23 times. By deflating 277.124 yen by 2.23, I estimated the real value of the surplus from rice production on 1.19 hectares of land, measured at 1910–1912 prices, at 124.271 yen, which was almost equivalent to the 122.877 yen as noted above. Therefore, in the early 1920s, by expanding their farm size, peasant families could obtain almost the same amount of income from rice production alone, measured in real value, as the sum of the incomes from rice production and domestic service in the early 1910s. This is why employers of domestic servants could not recruit workers without offering higher monthly wages.

A similar case can be observed in the process of labour outflow. Textile factories in metropolitan areas also offered higher wages to employ young women in northern Akita Prefecture. To illustrate this point, I outline the employment conditions of female textile workers using a May 1921 investigation of a Tokyo factory of the Kanegafuchi Cotton Spinning Company (Hosei University, Ohara Shakai Mondai Kenkyūsho, Kyōchōkai Shiryō, Taishō jūnen gogatsu jūyokka yori dō jūrokunichi ni itaru chōsa, Kanegafuchi Bōseki Kabushiki Kaisha Tokyo honten kōjō rōdōjijō chōsa hōkoku). This factory recruited young women from eastern Japan including the Tōhoku region. At the time of the investigation, the factory had a total of 2,321 female boarding workers, 130 of whom were from Akita Prefecture. Most of the female workers were paid wages under a piecework system. In April 1921, the average daily wage of a female worker in this factory, as calculated by dividing the total amount of wages paid to all the female workers by the sum of their days worked, was 0.801 yen. In addition to 10 days off on holiday, the female workers had one day off "four times a month". Thus, given 300 days worked a year, the average annual income of a female worker in this factory would amount to 240.3 yen (the product of 0.801 yen and 300 days).

In this factory, however, each female worker paid 3% of her wages as a premium to a "mutual aid association" every month. In addition, since young women from distant areas were accommodated in the company's dormitory, the factory collected 0.12 yen per diem in boarding fees and 27 to 28 yen in recruitment costs from each boarding worker. Given recruitment costs of 28 yen, the average annual net income of a female worker, as calculated by subtracting the premium, the boarding fee, and the recruitment costs from 240.3 yen, is estimated at 161.291 yen. The wage level of a female worker tended to increase the longer she stayed at this factory. As of the end

of 1920, however, 67.5% of all the female workers in this factory were newcomers hired within the past two years. Thus, once recruited by this factory, a young woman from Akita Prefecture could obtain an annual income of nearly 160 yen within a few years.

Female boarding workers hired by textile factories remitted a great portion of their incomes to their families just as domestic servants did. By sending out their daughter to a textile factory, parents could also reduce their household expenses. However, the household expenses saved would be the same whether the daughter lived in her employer's home or the factory dormitory so we need compare only the difference in wages paid to female textile workers and domestic servants. The statistical yearbooks of Akita Prefecture show that in 1921, a female general servant in northern Akita's Tsuchizaki was paid the highest monthly wage of 9 yen (Akita-ken 1912–1925, 1921 version). The annual income of her wages would amount to 108 yen. Nevertheless, the average annual net income of a female textile worker (161.291 yen) was 1.49 times greater than the domestic servant's 108 yen.

2.5 Conclusion

In northern Akita Prefecture, employers of domestic servants recruited workers at a low fixed wage in the early 1910s. While the limitations of the data prevent us from estimating marginal labour productivity in the agricultural sector, the stationary wage level of domestic servants implies that the labour supply in this region was unlimited in the early 1910s. From the late 1910s to the early 1920s, however, employers of domestic servants suffered severe labour shortages, revealing that the unlimited supply of labour was transformed into a limited one. This transformation resulted from local economic development led by an increase in agricultural productivity.

This case helps explain how a limited labour supply condition spread across the country. In the developed region of Ōsaka Prefecture, employers of domestic servants experienced labour shortages as early as the 1890s, showing that industrialisation had already brought to light the limited supply of labour in such regions. At that time, however, underdeveloped northern Akita Prefecture was a case in which the supply of labour remained unlimited. This contrast demonstrates that a condition of limited supply of labour had not yet spread across the country. Nevertheless, subsequent agricultural growth in the underdeveloped regions changed the situation because farming was the economic mainstay of such areas. In industrialising Japan, the production of rice, the main crop throughout the country, improved with a time lag from west to east. In western Japan, the yield of rice rapidly increased during the first decade of the twentieth century. Thereafter, eastern Japan also achieved a sharp increase in rice yield from the 1910s to the early 1920s (Hayami 1973). These facts imply that even in underdeveloped regions, movement of the labour supply from the agricultural to the non-agricultural sector was limited because of local economic development led by agricultural growth.

Appendix 1 Estimate of an Annual Net Outflow of Labour

The following is an explanation of how to estimate an annual net outflow of labour from an area. Official statistics divide temporary residents into two types defined as follows (Umemura et al. 1983; Saito 1998). The first are temporary residents who had migrated from an area to another; the second are temporary residents who had migrated to an area from another. The former denotes those who had registered an area as their place of permanent residence but who resided outside the area at the end of each year. The latter indicates those who resided inside an area at the end of each year but who had registered other areas as their places of permanent residence. I subtracted the number of temporary residents who had migrated to an area at the end of each year from the number who had migrated from the area at the same time. The annual increase (or decrease) in this difference is defined as the annual net outflow of labour from the area.

According to official data on temporary residents, the annual net outflow of women in northern Akita Prefecture was, on average, 762 between the ends of 1909 and 1915 (Akita-ken 1912–1925, 1909 and 1915 versions). At the end of 1913, the cohort aged 15–19 accounted for 11.5% of all female temporary residents who had migrated from this region (Akita-ken Kōbunshokan, Akita Kenchō Monjo, no. 12271). By multiplying 762 by 11.5%, I estimated the annual net outflow of women aged 15–19 at 88. However, this is an underestimate. When people left their homes to stay in other places as temporary residents, they had to register the places of their residence. The official data on temporary residents were based on this registration, but a considerable portion of temporary residents neglected the registration.

To assess the degree of underestimation, I calculated the exact difference between the number of female temporary residents who had migrated from and the number who had migrated to northern Akita Prefecture at the end of 1920. The 1920 census lists the exact number of those who stayed in this region at the time the census information was taken, namely on 1 October 1920 (Naikaku Tōkeikyoku 1927, pp. 2–5). Moreover, Akita Prefecture's statistical yearbooks specify the number of those who had registered this region as the location of their homes at the end of 1920 (Akita-ken 1912–1925, 1920 version). Of these two numbers, the latter was larger than the former because the outflow of labour exceeded the inflow of labour. Thus, by subtracting the former from the latter, I obtained the exact difference between the numbers of temporary residents who had migrated from and to northern Akita Prefecture. This difference was 1.93 times greater than the counterpart obtained using only the official data on temporary residents. By multiplying 88 by 1.93, I revised the annual net outflow of women aged 15–19 to 170. In the same manner, I estimated the annual net outflow of women aged 15–19, on average, at 728 between the ends of 1915 and 1920.

Appendix 2 Estimate of the Living-Cost Index in Northern Akita Prefecture

The following is an explanation of how to estimate the living-cost index in northern Akita Prefecture. Ohkawa et al. (1967) have already estimated the national index for living costs and I used the same method for my estimations. Based on the case of a typical household, I classified its living expenses by category and, when necessary, divided each category into items. Then, using the Laspeyres formula, I fixed a benchmark year and weighted each category or item. Finally, I multiplied the price index of each category or item by its weight and aggregated the resulting figures to calculate an index of the cost of living. To examine how price changes affected the household budget of a lower-class farming family, I used a 1934 survey of the household budget of a peasant family cultivating tenanted lands in Kita-Akita District (Akita Eirinkyoku 1935, pp. 12–17). I classified the living expenses of this family by category or item and weighted each category or item. Here, living expenses are defined as regular household expenses. Thus, I excluded irregular expenses, such as those for ceremonial occasions, from the household expenses of the family. I also converted the consumption of self-produced foods into its monetary value using price data available in the source. Then, I set 1910 as the benchmark year and calculated the living-cost index using price data from Akita City (Akita-ken 1912–1925, 1910–1924 versions).[7]

The categories, items, and weights (in percentage) of the model household's living expenses are listed at the end of this appendix. The classification of categories is based on Ohkawa et al. (1967). The food expenses category, weighted at 79.02, is divided into items. For each item, or each category other than food expenses, I used the price of a specified good or service. In some cases, however, the survey includes a number of goods or services under the heading of a single category or item. In such cases, I chose as the representative good or service the one for which the expenses were largest and then used its price data. Price data are unavailable for a number of goods listed in the survey. For these goods, I used the prices of their substitutes. The final list specifies as "representative" or "substitute" those categories or items for which I adopted a representative good or service or a substitute good.

A. Food expenses 79.02
   Items: rice (brown rice: substitute) 56.37, barely 3.32, soybean 2.52, soy source 1.18, salt 1.31, sugar (imported white sugar: substitute) 1.61, dishes other than staple food (dried bonito: representative and substitute) 7.15, beverages (*saké*: representative) 5.56
B. Clothes expenses (cotton cloth: representative) 4.56
C. Fuel and lighting expenses (kerosene: representative and substitute) 3.74[8]

[7] For a number of years, the sources divide each year into halves or quarters and list the highest, average, and lowest prices of each good or service. In this case, I calculated the annual average of each year using the average of these prices.

[8] According to this source, the largest portion of fuel and lighting expenses went to charges for the use of electric light, but electric-light use became more widespread in rural Akita Prefecture after

D. Housing expenses (carpenter's daily wage: representative) 10.07
E. Miscellaneous expenses (writing papers: representative and substitute) 2.63.

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Chapter 3
Childrearing Methods and Decreased Growth: An Examination of Infant Health in the Farming Communities of Taishō Japan (1912–1926)

Kazunori Murakoshi

Abstract This paper addresses the relationship between the growth of infants and the feeding process in rural Japan during the Taishō period. First, it will be shown that during this period the growth rates of infants living in rural areas were lower than the rates that characterized the mid Meiji period (1890–1896) and the beginning of the Shōwa period (1927–1929). It will also be established that most infants living in rural areas during the Taishō period continued to be breast-fed until the end of their first year. It will therefore be proposed that the decline in growth rates of rural infants can be attributed to breastfeeding practices. In the next section, evidence is presented to show that when mothers were engaged in heavy agricultural work soon after childbirth this was likely to result in a decrease in daily opportunities for breast-feeding. Finally, the evidence and analyses will be used to develop the hypothesis that decreased daily breast feeding as a result of engagement in heavy agricultural labor led to diminished milk production among mothers for several months after delivery. Despite this, many infants continued to be breast-fed, resulting in decreased growth during the latter half of infancy.

Keywords Traditional childrearing methods · Decreased breast milk production · Farming communities · Decreased growth of infants · Taishō period

3.1 Introduction

Infant mortality rates are generally regarded as an indicator of living standards. This is because they are thought to respond closely to changes in the surrounding environment, such as the nutritional state of the mother, methods of childrearing,

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and health and hygiene. According to Kōseishō Daijin Kanbō Tōkei Jōhōbu (1999), from 1901 until the mid-1920s, the infant mortality rate resulting from such factors exceeded 150‰, but from the second half of the 1920s it began to fall. It never again reached such a high rate, and lies at around 2‰ today. In other words, infant mortality rates in Japan can be characterised as having been at a high level until the mid 1920s, with a steady fall after that. Further, when neonatal and post-neonatal mortality rates are divided, it becomes clear that rates remained high because a drop in neonatal mortality that began at the beginning of the twentieth century had been offset by a rise in post-neonatal mortality. The sudden fall in overall infant mortality rates from the second half of the twentieth century was because the rise in post-neonatal mortality had been reversed.

The issue that needs to be addressed is therefore why infant mortality rates continued at this high level into the first half of the 1920s. It is probably correct to say that the search for the reasons began with the work of the Health and Hygiene Research Council, which from its foundation had as one of its purposes the need to "investigate the causes behind the high mortality rates of infants, children, adolescents and adults and devise ways of lowering them" (Hoken Eisei Chōsakai 1918, p. 4). From 1918 the Council undertook field investigations to examine health and hygiene in farming communities, including nationwide surveys of infant mortality rates and sanitary conditions.[1] The results showed that infant mortality rates in farming communities were higher than the national average, while figures for caloric intake and physical constitution were worse, and parasitic infection more frequent (Mōri 1972, pp. 106–108). Responsibility for these surveys passed to government agencies at a prefectural or equivalent level and continued until 1927. Meanwhile, medical researchers such as Sasaki (1922) used the same methods to survey and report on the sanitary conditions in farming communities.

In 1921, three years after the government had begun nationwide surveys, Gitō Teruoka, a labour physiologist and the pioneer of labour science in Japan, pointed out that it was "yet to make known its views" regarding the evidence that had been revealed of the high infant mortality rates in rural communities (Teruoka 1921). This continued to be the case. Rather than investigating the causes behind the survey results, the Health and Hygiene Research Council responded by focusing on suggestions for concrete policies that would lower the mortality rates, such as the establishment of public health centres for infants and children (Mōri 1972, pp. 108–110). In fact, it was a private body, the Ohara Institute for Social Research, that looked for the reasons. In 1919, the year after the government surveys began, Teruoka and

[1] Since the original publication of this chapter, the writer has presented an analytical framework for the explanation of the decline in post-neonatal mortality rates from 1926 (Murakoshi 2018). In Murakoshi (2017) the proposition suggested in this chapter has been developed, and its validity has been examined. According to the revised proposition, women in farming communities continued to bear heavy workloads into the later 1920s, so that infants did not receive sufficient breast milk. However, because measures had been taken to improve infants' nutrient intake the post-neonatal mortality rate fell. It was also shown that the powdered milk that was used to improve nutrient intake influenced this fall. For an outline of these investigations, see Shimizu, "Commentary" (1990, pp. 44–47). For the way in which the surveys were planned, see Murakoshi (2005), pp. 13–26.

other members of the institute staff had investigated the circumstances surrounding infant mortality in the city of Hachiōji. In the report that mainly summarised the results of their work, Teruoka concluded that the rise in mortality rates was caused by the fact that women who worked outside the home were unable to breastfeed, which lead to an increase in the number of infants who were bottle fed, or given a combination of breast and bottle milk, reducing their access to natural sources of nutrition and impeding their development (Teruoka 1921, p. 68). He presented further evidence for this view ten years later (Teruoka 1931, pp. 346–357).

The focus on labour conditions as the probable explanation for infant mortality was continued in the surveys of farming communities carried out by the Agricultural Labour Research Centre of the Kurashiki Institute for Labour Science, which was founded in 1921 with Teruoka as its first director.[2] In 1937 it became the Japan Institute for Labour Science). A later survey of farming communities pointed to harsh working conditions of women in the final trimester of pregnancy as a cause of neonatal mortality, and to the influence of the intensity of maternal labour on levels of infant mortality (Shirai and Yokokawa 1937, p. 68). In urban areas, it was thought that female labour influenced infant mortality because of its effect on childrearing practices such as breastfeeding; in farming communities, it was thought that the problem lay with the influence on maternal health.

By contrast with the fieldwork and research carried out at the time, there has been relatively little study of this topic in postwar Japan. The main reason for this seems to be the fact that for a long time there was doubt about the accuracy of mortality figures from the period before 1920, when the first national census was undertaken. In other words, before any investigation into the causes of the high levels of infant mortality rates could begin, it was necessary to ascertain standards and fluctuations in mortality in the Meiji period (1868–1912). The breakthrough came in the early 1990s. Takase Masato, who had been looking for evidence that would clarify the situation, was the first to suggest the likelihood that death rolls from around 1880 were "highly accurate" (1991, p. 33). After this, Saito (1992, pp. 262–263) compared the estimated infant mortality rates for the Tokugawa period (1603–1868) with data for 1903–1913 and the interwar period, and concluded that the decline in infant mortality rates probably began in the 1920s. As a result of this research, nowadays it is accepted that infant mortality rates continued to be high throughout the late nineteenth century and into the twentieth, only showing a decline from around 1926 onwards.

It is now possible to proceed to an overview of postwar research into this topic. Itō (1998) is among those who share Teruoka's view (1921, 1931). He concludes

[2]For the history of the Institute, see the history section of the Ōhara Memorial Institute for Labour Science website at http://www.isl.or.jp/information/history.html. It has been ascertained that fifty-three issues of *Nōgyō Rōdō Chōsasho hōkoku* (Reports of the Agricultural Labour Research Centre) were published during the years 1933–1939 and are in the collection of the National Diet Library of Japan. Nos. 1–34 were edited by the Kurashiki Institute for Labour Science, and Nos. 36–53 by the Japan Institute for Labour Science. The articles that appeared in the reports were also published separately, in *Rōdō kagaku* (The journal of labour science), which is included in the digital archives of the Ōhara Memorial Institute for Labour Science, at https://darch.isl.or.jp).

(1998, pp. 736–737) that from around 1910 through to the First World War the participation of mothers in the labour force reduced the incidence of breastfeeding and therefore led to a rise in infant mortality rates. This was because the substitute for breastfeeding was either bottle feeding or combined breast and bottle feeding, He argues that in both cases, the bottle feeding component tended to involve inadequate dilution methods, which had a negative effect on neonatal health.

In the case of research into farming communities as well, there seems to be a continuation of the prewar view that working had an indirect influence on infant health via its effect on maternal health. Saito (1991, p. 39) inferred that long working hours, particularly at peak times in the agricultural year, harmed maternal heath, leading to high mortality rates during pregnancy and childbirth, and also increasing infant mortality. He also suggested (1989, p. 350) that insufficient protein intake on the part of mothers engaged in formwork while breastfeeding may have harmed the quality of their breast milk, leading to nutritional deficiencies in infants. Infant mortality is therefore linked to the influence that a rise in the female workload is likely to have had on maternal health and the quality of their breast milk.

The research outlined above implies that the female workload raised post-neonatal mortality rates because in urban areas it affected methods of childrearing, and in farming communities it influenced maternal health and the quality of breast milk. However, these explanations need to be questioned. Surely it is possible that whether in urban areas or in farming communities, female labour affected both maternal health and methods of childrearing. This is because, even though maternal health has been viewed as the reason for infant mortality in farming communities, it is also possible to infer, as follows, that the maternal workload also had an effect on childrearing.

The size of a workload can be measured as the intensity of the work multiplied by the number of hours spent. Since physical strength puts a limit on intensity, increases in agricultural workloads were undoubtedly met by extending the length of the working day. In order to work longer hours it is likely that postpartum mothers shortened the time spent in recovery, and that even after they had recovered physically they had to reduce the amount of time that they spent on childrearing duties each day. In this respect, their situation was probably no different from that facing urban mothers.

If this was, indeed, the case, it may have led to decreased growth in infants, and therefore played a significant role in post-neonatal mortality rates. This chapter therefore examines the correlations between childrearing methods and infant development in farming communities in Taishō Japan (1912–1926). Part 2 will use a comparison with healthy infants in the years immediately before and after to show that during the Taishō period infant growth in farming communities deteriorated either from the end of early infancy or from late infancy, and that this was caused by either the quality of breast milk or by the way in which breastfeeding was carried out. Part Three demonstrates that ambulation, which can be seen as a proxy variable of the postpartum recovery period, had been brought forward by one or two weeks compared to existing customary rules, revealing that early ambulation was linked to negative development in late infancy. Part 4 considers the implications of these observations, including the possibility that the timing of ambulation is a proxy variable of the time

available for childrearing. After demonstrating that breastfeeding activities can be regarded as a practical aspect of childrearing that require time, it is proposed that infrequent breastfeeding reduces the production of milk sooner after birth, and that this reduction is correlated to development problems from the end of early infancy or during the final stage of infancy. The article ends with a summary of the contents and a proposal regarding related topics of research, including ways of testing the proposition.

3.2 Feeding Methods and Growth Levels

3.2.1 Growth Levels as Indicated by Weight and Height

This section will focus on post-neonatal growth levels in farming communities in Taishō Japan. Indicators of human growth include weight, height, and the circumferences of the chest and head. This chapter will take account of the average weights and heights of infants divided by sex and age in months, because changes in weight and height are likely to be clear indicators of the influence of nutrient intake. First there will be an explanation of the data collected during the farming community field investigations of the Health and Hygiene Research Council (hereafter abbreviated to "farming data") as outlined in Kamioka (1989, pp. 11–14) and of the two data sets that are seen as the standard "growth values" of the prewar period: the Mishima data of the late nineteenth century and the Yoshinaga data of the second half of the 1920s. After that, the farming data will be compared with the other two sets.

The Farming Data

As was explained in the introduction, the farming community field investigations carried out by the Health and Hygiene Research Council formed a nationwide project that collected information according to categories specified by the Council. Under the aegis of the Hygiene Agency of the Japanese Home Ministry, central government carried out investigations of nine villages from 1918 to 1921. Using the Council investigations as a model, work was continued until the late 1920s, this time by government agencies at a prefectural or equivalent level. Two of the original nine villages were destroyed as a result of the Great Kantō Earthquake of 1923. The data from the remaining seven, and the data from seventy-nine of the 134 villages that were surveyed by government agencies from 1921 to 1927, were published as a report of the Home Ministry Hygiene Agency in 1929 and later reprinted (Shimizu 1990). The data collected by central government and prefectural agencies are displayed separately, and further separated into tables giving the average weight and heights of infants according to sex and age in months. The analysis in this chapter uses the data from the seventy-eight villages surveyed by prefectural agencies up to 1925,

excluding neonates (Shimizu 1990, pp. 486–489). This comprises a total of 4090 infants, 2083 males and 2007 females.

Mishima Data

According to Mishima (1902, p. 8), a doctor who played a major role in the establishment of the Japanese school health system, these were compiled from the physical measurements carried out by Mishima himself and his associates while he was a postgraduate student in the Medical School of Tokyo Imperial University, and later, during private practice.[3] While he was a postgraduate student (1890–1892), he measured newly born babies in the obstetrics wards of Dai'ichi'in Hospital, healthy infants who were outpatients in the infants' wards, and infants who came to the hospital for smallpox vaccinations. From 1892, when he opened a private practice, until 1896, when he became Director of Hygiene for the Ministry of Education, he also measured neonates whom he visited at home, infants whom he examined at his surgery, and those who came for smallpox vaccinations. His data can therefore be regarded as giving growth values for the weights and heights of healthy infants born between 1890 and 1896.

The Yoshinaga Data

These are weighted average values calculated from the results of several surveys of growth carried out from 1927 to 1929 that give average weights and heights of infants divided according to sex and age in months (Yoshinaga 1930, pp. 155–157). There is a gap of five years between the last year of the Taishō farming data set described in section "The Farming Data" and the first year of this data set. The titles show that several of the surveys that were used to calculate the weighted averages contained measurements of healthy infants, and Yoshinaga's own title, "Standard values of growth of Japanese infants and children" (1930) suggests that the intention was to find "standard values" for infant growth during this time.

A Comparison of the Three Data Sets

As the above makes clear, the Mishima and Yoshinaga data sets give growth values for the weights and heights of healthy infants. To make comparison possible with the farming data, they are displayed by sex in Fig. 3.1a and b.

Figure 3.1a gives the data for males. Gradations on the horizontal axis show age by month, those on the left-hand vertical axis average weight, and those on the right-

[3]The data is available as an appendix titled "Nihon shōni hatsuiku ichiranhyō" (Table showing the growth of Japanese infants) in Mishima (1902). It can also be found in the reprint of Kami (1997), and online as part of the National Diet Library's digital collection at http://dl.ndl.go.jp.

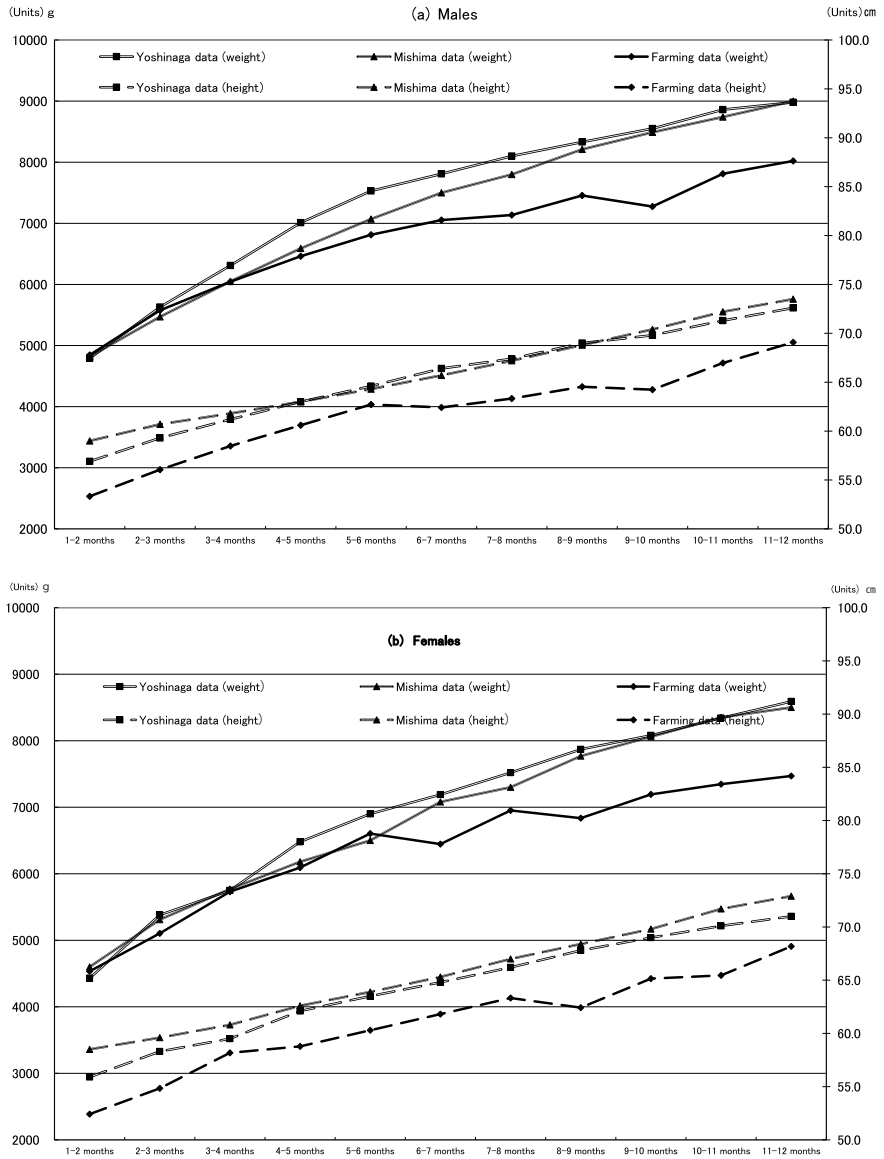

Fig. 3.1 Average weight and height of infants according to age in months. *Sources* Farming data: "Table 16: Weight, height, and circumferences of chest and head classified according to physical condition and age (regional surveys)" (Shimizu 1990, pp. 488–489)
Mishima data: Attached table "Chart of growth for Japanese infants" (Mishia 1902)
Yoshinaga data: "Standard values for the growth of young Japanese children" (Yoshinaga 1930, pp. 155–157)

hand vertical axis average height. The lines with diamonds show the farming data, the lines with triangles show the Mishima data, and the lines with squares show the Yoshinaga data. Average weight is indicated by continuous lines, and average height by noncontinuous lines.

The continuous lines show that for male infants in the early stage, the Yoshinaga data exhibit heavier average weights than the Mishima data, but that for the later stage of infancy values are virtually the same. On the other hand, the farming data are underneath the other two. From the age of six to seven months, the weights given in the farming data are over 5% lower than those in the Mishima data, and by four to five months they are already over 5% lower than those in the Yoshinaga data. The gap between the farming data and the other two sets is even greater at eleven to twelve months, being nearly 10% lower than both.

The noncontinuous lines show that at one to two months, the average heights in the farming data are lower than both the other sets. This is because the infants in this set are of a shorter height from birth. Until the age of five to six months, the gap between the farming data and the other sets grows smaller, but from six to seven months onwards it grows larger, reaching less than 95% of the others. In other words, in terms of average weight, the growth of male infants in farming communities deteriorates from either the end of the early stage of infancy or from the late stage, while in terms of average height the deterioration appears in the late stage.

Figure 3.1b, which gives the data for females, is arranged in exactly the same way as Fig. 3.1a. The continuous lines showing growth in average weight are not smooth for either the Mishima or the Yoshinaga sets, but the overall shapes are similar to those for males. Just as in the case of male infants, the farming data fall below 5% of the Mishima data from the sixth to seventh months, and from the fourth to fifth months in the case of the Yoshinaga data. The noncontinuous line showing growth in average height is lower for the farming data than both the other sets. At three to four months it draws nearer to the Mishima and Yoshinaga sets, but from that point the gap does not get any smaller, reaching below 5% of both the other sets at four to five months, which is earlier than the case of male infants. In terms of average weight, the growth of female infants in farming communities deteriorates from either the end of the early stage of infancy or from the late stage, while in terms of average height the deterioration appears from the end of the early stage.

The overall picture is that by comparison with the Yoshinaga and Mishima figures for healthy infants, the farming data indicate deterioration in growth rates for both sexes from either the end of early infancy or from late infancy.

3.2.2 Feeding Methods

Before examining the correlations between feeding methods and growth from the post-neonatal stage, it is necessary to consider the nature of the feeding methods that were generally employed in farming communities during the Taishō period. Shimizu (1990, pp. 99–100) includes data about feeding methods as well as the figures for average weights and heights that were examined in Sect. 3.2.1. The information was

compiled during the field investigations through asking the mothers or guardians of children aged between one and fifteen years how the children had been fed as infants, and asking the mothers and guardians of infants of one year or less about the feeding methods that were being used currently.

Table 3.1a shows that 90.0% of the mothers or guardians of children aged between one and fifteen years answered that the children had been fed with "human milk", in other words breast milk, much higher than the rates of those using bottle feeding (1.4%) or a combination of breast and bottle milk (6.3%). The columns below the thick line in Table 3.1a give a rough breakdown of the variations within each feeding method. In the case of feeding by breast milk, 99.3% was with milk from the mother only, and 0.7% was either milk from the mother and milk from a wet nurse or milk from a wet nurse only. In other words, 90% of infants were fed with breast milk only, and in almost all cases this was milk from the mother alone. The breakdown in the cases of full or partial bottle feeding shows that the use of mainly evaporated milk (evaporated milk + Grain products etc.) was more common, at 58.0% of those using bottle milk alone, and 48.7% of those using a combination of bottle and breast milk.

Table 3.1b shows that the percentage of infants below twelve months who were being fed "human milk" was 87.8, a little lower than that in Table 3.1a but more or less the same. The breakdown of full or partial bottle feeding shows a high ratio under mainly evaporated milk, which is also similar to the Fig. 3.1a. The evidence from these tables shows that in farming communities breastfeeding was at levels of 88–90%.

In addition, according to Itō (1998, pp. 732–733), it was the standard in prewar Japanese urban areas for 78–81% of infants who were alive at the time when they were surveyed to have been breastfed, while a survey of children under 15 from 55 villages from the whole of Japan found that 90.8% had been breast fed. In other words, there was a gap of over ten points between the ratio of breastfeeding in urban and farming communities. This supports the evidence presented here of a similar 10 points gap between breastfeeding in urban and farming communities in Taishō Japan.

However, since the figures given above are only for infants who survived, it is not clear whether the breastfeeding ratio in farming communities would be as high if details of deceased infants were included. Both the surveys of children aged one to fifteen and the surveys of those aged less than twelve months revealed that in the case of full or partial bottle feeding, evaporated milk was the main ingredient. Since evaporated milk is not a suitable source of infant nutrition, it is likely that infants who were either wholly or partly bottle-fed were exposed to higher risks of early death than those who were entirely breastfed, and therefore had higher mortality rates. Since infants who had died because of this would not have been included in the statistics, it is possible that the breastfeeding ratio was artificially high. For this reason, the figures for children who were infants at the time of the survey were reconfigured so that the ratio of breastfed infants allowed for estimated deaths. The results are given in Table 3.1c. The infant mortality rate in the seventy-seven villages surveyed by government agencies was 162‰ (Shimizu 1990). If this is made into a premise, and it is assumed that the mortality rate of infants who were either wholly

Table 3.1 Feeding methods during infancy

(a) Information regarding the feeding during infancy of children aged between 1 and 15 at the time of the survey[1)]

Feeding with "human" milk		Bottle-feeding			Feeding by a combination of breast milk and bottle				Unknown	Total
48757		735			3399				1257	54148
90.0%		1.4%			6.3%				2.3%	
Mother's breast milk	Breast milk from the mother and/or from a wet nurse	Cow's milk + evaporated milk etc.	Evaporated milk+Grain products etc.	Grain products etc.	Cow's milk + evaporated milk etc.	Evaporated milk+Grain products etc.	Grain products etc.	Other		
48406	351	232	426	77	1008	1656	566	169		
99.3%	0.7%	31.6%	58.0%	10.5%	29.7%	48.7%	16.7%	5.0%		

(b)Information regarding the feeding of infants aged less than 12 months at the time of the survey[2)]

Feeding with "human" milk	Bottle-feeding	Feeding by a combination of breast milk and bottle	Unknown	Total
3833	68	366	98	4365
87.8%	1.6%	8.4%	2.2%	

(continued)

Table 3.1 (continued)

(b)Information regarding the feeding of infants aged less than 12 months at the time of the survey[2)]

Feeding with "human" milk		Bottle-feeding			Feeding by a combination of breast milk and bottle				Unknown	Total
Mother's breast milk	Breast milk from the mother and/or from a wet nurse	Cow's milk + evaporated milk etc.	Evaporated milk etc.	Grain products etc.	Cow's milk + evaporated milk etc.	Evaporated milk + other	Grain products etc.	Other		
3819	14	16	46	6	69	186	87	24		
99.6%	0.4%	23.5%	67.6%	8.8%	18.9%	50.8%	23.8%	6.6%		

(c) Estimated breakdown of feeding methods when deceased infants are included + mortality rates according to feeding method

"Human" milk	Bottle/combination of breast milk and bottle	Infant mortality rate	Mortality rate of breast-fed infants	Mortality rate of infants fed by bottle/fed by a combination of breast milk and bottle	Ratio of mortality of combination breast milk and bottle-fed infants versus breast-fed infants
85.7%	14.3%	162‰	141‰	283‰	2

Sources For (a) and (b), "Table 14: Children classified according to physical condition and feeding method when infants (local government surveys)" (Shimizu 1990, pp. 492–497); the mortality rates in (c) are calculated from the data of the most recent "10-year period" for the 77 villages surveyed by local government agencies from 1920–1925 (Shimizu 1990, pp. 81–82). In addition, the mortality ratio of combination breast milk and bottle-fed infants versus breast-fed infants is the numerical value based on the assumption that the ratio would be the same as that calculated for the cities of Hachiōji and Ōsaka during the period 1912–1926, at 2.2 and 1.8 respectively. These were given as examples of urban area ratios in Itō (1998, p. 735)

Notes

1) "Milk" in "Cow's milk + evaporated milk etc." under "Bottle-feeding" includes goat milk; "milk" in "Cow's milk and evaporated milk etc." under "Combination of breast milk and bottle" includes powdered milk and lactogen

2) For "Bottle-feeding", see Note 1. "Cow's milk" in "Cow's milk and evaporated milk etc." under "Combination of breast milk and bottle" includes lactogen

or partly bottle fed was twice that of those who were breast fed—as was the case in urban areas, the ratio of infants who were breast fed would be 85.7% when estimated deaths were included. This is only two points lower than the 87.8% in Table 3.1b. In other words, even if infants who did not survive are included, this does not alter the high breastfeeding ratio of farming communities during the Taishō period. The breastfeeding ratio for urban areas given above was 80% but again, this does not include data for infants who did not survive. Because infants who were either wholly or partly bottle fed are likely to have had higher mortality rates, if infants who did not survive were added, the breastfeeding ratio would probably be lower still. It seems clear that breastfeeding rates were higher in farming communities than in urban areas.

In Sect. 3.2.1 it was shown that by comparison with healthy infants in the 1890s or the second half of the 1920s, the growth of infants in Taishō farming communities underwent deterioration, either from the end of early infancy or from late infancy. Further, it was suggested above that even if infants who did not survive are included, the ratio of infant breastfeeding in farming communities was likely to have exceeded 85%. Evaporated milk and cow's milk are lacking in the nutrients that infants need, but even though the ratio of whole and partial bottle feeding in farming communities was low, there was a deterioration in infants' growth from a few months after the neonatal period.

Possible causes of growth problems are insufficient intake of nutrients or, even if intake is sufficient, the body's need to use nutrients for purposes other than growth. An example of the latter would be a high incidence of illness, since this would mean that a large proportion of nutrient intake would be diverted to recovery purposes. An example of the former, in the case of breastfeeding, would be insufficient intake of breast milk. Such cases could be divided into those where there was a problem with the quality of the breast milk, those where there was a problem with the actual feeding method, and those where both of these possibilities were involved. In all these cases, however, from the point of view of nutrient intake, the cause of the growth discrepancy when compared with healthy infants must lie either with the breast milk itself, or with the method of breastfeeding.

3.3 Postpartum Recovery Periods and Infant Growth

In Part 1 it was suggested that an increase in the female workload in farming communities might have shortened postpartum recovery periods and the time available for childrearing. In this part, evidence will be presented regarded the shortening of postpartum recovery periods. After that, the correlations between lengths of postpartum recovery and growth in post-neonatal infants will be examined.

3.3.1 Changes in the Timing of Ambulation

The timing of ambulation will be treated as an indicator of the length of postpartum recovery, since this will allow the timing prescribed by custom to be compared with actual practice. Childbirth taboos recorded in a 1935 survey of childhood-related customs from birth onwards (Onshi Zaidan Boshi Ai'ikukai 1975, pp. 194–207) will be used to determine the details of customary rules. The results were divided by prefecture, but the overall picture is of three phases: one to two weeks of bed rest until *tokobarai*, when the mother was allowed to leave the delivery place; a further period of rest lasting one to two weeks, during which the mother was confined to the house; and after this, *ubuya'ake* or *imiake* (the lifting of the taboo), at from three to four weeks from childbirth, after which the mother was able to participate in forms of outside work such as agriculture. Even after this, for a period of around fifty to seventy-five days careful attention was paid to the mother's physical condition. In other words, the customary timing of ambulation was one to two weeks after birth. This is in rough agreement with the present-day practice of allowing postpartum mothers around two weeks in which they are able to focus solely on the daily necessities of life and breastfeeding (Imazu and Katō 2006, p. 67).

The health and hygiene field investigation reports give information about the actual timing of ambulation in particular villages in the Taishō period. The items that were surveyed are listed in the section titled "Nōson hoken eisei jitchi chōsa hyōjun, dai-ichikō: Chōsa yōkō" (Criteria for farming community field investigations, item one: main points) (Shimizu 1990, p. 57), and they include "circumstances related to pregnancy, birth and childrearing", under which there are sub-items including "customs related to pregnancy, delivery and childrearing", "circumstances related to antepartum" and "circumstances related to postpartum". The writer reviewed the health and hygiene field investigation reports for over 120 villages that he had collected and listed in Murakoshi (2007, pp. 193–196) to see if there were any concrete references to ambulation in sub-items such as "circumstances related to postpartum". The only case in which the results of interviews were given in full is the Home Ministry report on the village of Ugari in Shizuoka Prefecture (No.12 in Table 3.2). The section on "circumstances related to postpartum" gives the following frequency distributions and averages for the number of days until ambulation:

For the 115 cases mentioned above, the timing of postpartum ambulation was:

On the day of delivery: 1
Less than three days: 31
Less than five days: 23
Less than seven days: 37
Over seven but less than thirty days: 23
Out of the 115 cases, the average timing of ambulation was seven days postpartum.

The "115 cases" refer to the 115 women whose data were recorded under the entry for "antepartum circumstances" that immediately preceded the entry for "postpartum circumstances". The cases were divided into five groups according to the number of

Table 3.2 Circumstances related to ambulation by village, as recorded in the health and hygiene field investigation reports

Number	Prefecture/district	Village	Comments under "circumstances related to postpartum" and "customs related to pregnancy, delivery and childrearing" (*, under "circumstances related to pregnancy, delivery and childbirth" and "customs related to the care of infants")	Group by length of bed rest
1	Akita	Tomine	Most women spend from one to two weeks in bed after childbirth, but in the most extreme cases it is by no means unusual for women to get up before a week has passed	2
2	Akita	Umakawa	Three weeks is the normal amount of time for women to rest after childbirth, but in households where there is a shortage of workers, or during peak times of the agricultural year, you hear of women who are already up before two weeks has passed	3
			*During the day while their mothers are working, infants are carried on their mothers' backs or placed in "baby baskets" (*eijizume* or *ihizume*)	
3	Fukui	Amatsu	Mothers begin ambulating from three days to a week after birth and resume their normal work. They work in the fields all day disregarding all childrearing activities and leaving the care of the newly born child to the parents in law	1
			*Mothers work in the fields all day disregarding all childrearing activities and leaving the care of their infants to the parents in law. While they are working in the fields they feed their infants three times…	
4	Fukui	Yoshino	Mothers begin ambulating from three to seven days after giving birth and resume their normal work	1
			*Every morning mothers feed their infants and then go out to work in the fields. If there is someone to care for the newly born, the infant will be left with them, and it will be fed with rice gruel, evaporated milk, or ordinary cow's milk etc. If there is no such person, the newly born infant will not be fed anything, but simply be left to cry	

(continued)

Table 3.2 (continued)

Number	Prefecture/district	Village	Comments under "circumstances related to postpartum" and "customs related to pregnancy, delivery and childrearing" (*, under "circumstances related to pregnancy, delivery and childbirth" and "customs related to the care of infants")	Group by length of bed rest
5	Fukui	Mimi	*In busy periods infants are fed only in the morning and at noon, with no breast-feeding in between those times. If an infant happens to cry very loudly, it will be given "*suriko*", ground rice dissolved in water, to help it to wait until the next feed	
6	Toyama	Fuse	It is not unusual for mothers to work outside a week after giving birth. But the general rule seems to be that they resume work in the third week	1
			*With the exception of the winter months, parents work outside for the whole day, the only exception being that mothers will return home from time to time in order to feed their infants	
7	Ishikawa	Nakaōchi	Many mothers begin ambulating around one week after giving birth	1
8	Ibaraki	Naka	Many mothers spend the 21 days after childbirth resting in the room where the child was born	3
			*Mothers who are breastfeeding rarely take the infant with them when they are working in the fields. Instead, they entrust the care of the child to old people or young children at home. Normally, they breastfeed from time to time either by going home themselves or by having the child brought to where they are working	
9	Chiba	Yamabe	Ambulation normally takes place at 20 days, and there are quite a lot of cases of between 7 and 10 days. Only a few begin ambulating before this	3
10	Saitama	Moro	In general, the first week postpartum is spend in bedrest and mothers do not begin to work outside the house until around 10 more days have passed. Women of the upper class tend to rest for about three weeks after giving birth	2

(continued)

Table 3.2 (continued)

Number	Prefecture/district	Village	Comments under "circumstances related to postpartum" and "customs related to pregnancy, delivery and childrearing" (*, under "circumstances related to pregnancy, delivery and childbirth" and "customs related to the care of infants")	Group by length of bed rest
11	Tokyo	Tokura	At the earliest, the custom is for ambulation to take place after three days; at the latest it is seven days	1
12	Shizuoka	Ugari	Length of time between delivery and ambulation: The day of birth 1 person, less than 3 days 31 people, less than 5 days 23, less than 7 days 37, less than 30 days 23; out of 115 cases, the average point of ambulation was 7 days after giving birth. … Most women return to farm work at around 10 days after giving birth, the average period of time being 17 days	1
13	Shizuoka	Soga	After childbirth … the majority begin ambulating within one week … The earliest that they resume farm work is after ten days, and the average is two weeks	1
14	Shizuoka	Higashiasaba	With regard to the end of bedrest, the majority begin ambulating within 7 days, which seems too early to begin normal activities	1
15	Yamanashi	Fujimi	They rest for one week after postpartum and do not start working outside the house until around 10 days have passed	2
16	Hyōgo	Ieshima	They are already ambulating a week after giving birth to move their body a little. They look after their new-born babies, and mothers of the poorer classes are even cooking and washing the clothes	1
17	Kyōto	Otokuni	They say that women rest for five days after giving birth … They avoid working, and do not resume their normal duties until a month has passed	1
18	Shimane	Kuromatsu	After childbirth in general there are many cases where women rest in bed and focus on recovering for about 3 weeks; however, it appears that among the lower classes there are women who are already taking care of the daily necessities a few days after giving birth	3

(continued)

Table 3.2 (continued)

Number	Prefecture/district	Village	Comments under "circumstances related to postpartum" and "customs related to pregnancy, delivery and childrearing" (*, under "circumstances related to pregnancy, delivery and childbirth" and "customs related to the care of infants")	Group by length of bed rest
19	Ehime	Shimizu	They say that it is not unusual for women to get up and begin ambulating two or three days postpartum	1
20	Kōchi	Hiro'okakami	The general custom within the village is for mothers to rest in bed for one week	2
21	Saga	Sarushi	Mothers tend to rest in bed for 21 days. There are some who ambulate earlier than this (our survey results so far give 9 days as the earliest), but they do not begin farm work, doing no more than light tasks within the house… They only begin to work 30–40 days after childbirth	3
22	Oita	Itoguchi	In general, mothers rest in bed for one week postpartum and do not resume farm work until around 10 days after this. Among women of the upper classes, the custom is to rest for about a month postpartum	2
23	Miyazaki	Uryūno	After giving birth, it is general for mothers to stay in bed for 10 days and focus on resting and recovering, but among the lower classes, it seems that after 7 days some are already taking care of the daily necessities, and at the extreme there are sometimes those who resume work at this time	2
24	Shiga	Taihō	The general average is for mothers to have a recovery period of two weeks, which they spend quietly resting.. They resume work from the fifth week	–
25	Shiga	Azuchi	Mothers mostly spend two weeks resting, resuming work after thirty days	–

Source The reports listed in the appendix of the Japanese-language original. The writer made some adjustments in the orthography for the convenience of readers

days of bed rest before ambulation. The largest group was over five and less than seven days, at 37 people, with over one and less than three days as the second largest. The total for the actual day of delivery to less than seven days was 92 people, or 80%. Since customary rules for the timing of ambulation stipulated a period of one to two weeks postpartum, the fact that 92 people (80%) had less than seven days indicates that in the village of Ugari, ambulation was occurring earlier than was stipulated by customary rules.

Of course, it is necessary to investigate the situation in other villages. However, none of the other reports that have been collected provide this level of detail. Most of them either give the impressions of members of the survey team or no information at all about ambulation. It is likely that in most cases scarcity of staff and pressures of time precluded interviews regarding women's postpartum experiences. Of the reports from over 120 villages that the writer has collected, information from over 80 villages dates from the period covered by this article, in other words, from 1926 or earlier. There are reports from only 24 villages, including Ugari, that give concrete details regarding the timing of ambulation. The "conditions regarding ambulation" recorded for these 24 villages are given in the fourth column of Table 3.2 (in the top row where there are two rows). The explanation of "conditions regarding ambulation" for No. 24, the village of Taihō in Shiga prefecture is almost identical to that for No. 25, the village of Azuchi, and both explanations conform to the customary rules given in Sect. 3.3.1. It is impossible to know whether this information is based on the field investigations or whether the staff just noted down the customary time for the lifting of childbirth taboos. These two villages were therefore removed from the analysis as being of questionable reliability.

Of the remaining 22 villages, in Tomine (Akita prefecture), No. 1, while ambulation was generally said to occur in the period from the first week after childbirth to after two weeks, less than one week was not unusual either. In Yoshino (Fukui prefecture), No. 4, the period was even shorter, at from three days to one week, and the situation in Tokura (Tokyo district), No. 11, was the same. These short periods were not limited to eastern Japan. In Shimizu (Ehime prefecture), No. 19, periods of two to three days were not unusual. In other words, Ugari is by no means the only case where ambulation occurred after less than the one to two weeks that were dictated by custom.

This type of information does not make it possible to calculate the average timing of ambulation in each village as was done in the case of Ugari. Instead, the timings have been divided into three: (1) for periods of less than one week, in other words, shorter than customary rules; (2) for periods of one week or more to less than two weeks, in other words conforming to customary rules; and (3) for periods of two weeks or more, longer than customary rules. The appropriate numbers from (1) to (3) for each village have been entered in column 5 of Table 3.2, under the heading "Group by length of bed rest". This method does not yield exact figures, but according to the information in column 4 of Table 3.2, of the 22 villages, 11 can be classified as (1), 6 as (2), and 5 as (3). These groupings can be regarded as indicators of the timing of ambulation in these villages. Since there is no reason to believe that there is any bias behind the fact that most of the reports that gave concrete details concerning

ambulation were cases where bed rest was relatively short, it is surely only chance that led to timings being given in these particular cases. The sample is not large, but it is nevertheless true that 50% of the villages had ambulation timings that fell below customary rules. In other words, as far as it is possible to judge from these 22 cases, it can be said that in farming communities of the Taishō period, the period of recovery after birth had become shorter than that dictated by custom.

It is also possible to investigate antepartum practices. Of the 22 villages that gave concrete details of the timing of ambulation, 19 also had comments related to "antepartum conditions", the exceptions being Ieshima, No. 16, Shimizu, No. 19, and Hiro'okakami, No. 20. As in the case of Tomine (No. 1), where women were said to perform "agricultural work and other tasks until the actual day of delivery", it seems likely that in all 22 villages it was the custom for pregnant women to labour until they gave birth. Only in the reports of four villages were there clear references to consideration being taken regarding the intensity of the tasks. In Umakawa, No. 2, there was a reference to avoiding "harsh labour" near the due date, while in Moro, No. 10, Fujimi, No. 15, and Itoguchi, No. 22, the reference was to avoiding "severe tasks" and so on.

3.3.2 Correlations Between Growth Indicators and the Timing of Ambulation

In Sect. 3.3.1 the trend towards shorter postpartum recovery periods was confirmed, although the evidence came from only 22 villages. In this section, correlations between the length of the maternal recovery period and post neonatal growth of infants will be examined. For this purpose, it is first necessary to use the data regarding average weight by sex and by age in months in Shimizu (1990) to create growth indicators for post-neonatal infants in each village. The process can be explained from the example of the village of Umakawa given in Table 3.3. The average weights of infants according to sex and age in months obtained from the prefectural or equivalent level surveys of 77 villages investigated in Part 2 are shown in the column headed "Regional Surveys (*kan*)". The average weights of infants in Umakawa are given according to sex and age in months in the column headed "Umakawa (*kan*)", while the numbers of infants from which each average was obtained are given in the column headed "Number of infants". First it was necessary to calculate the variations between the average weights by sex and age in months of infants in Umakawa and the equivalent values for the 77 villages. For example, the average weight of male infants aged "1–2 months" (one month and over, but less than two) was1.600 *kan* (1 *kan* being equal to 3.75 kg), while the average value for the 77 villages was 1.292 *kan*, so the difference was 0.308 *kan*. This figure is given in the column headed "Variation from the average value". The variations from the average value for each month, and for male and female infants, have been calculated in the same way. When there are no infants for a particular month, the space has been left blank.

Table 3.3 Post-neonatal growth indicators (weight): the case of the Village of Umakawa, Akita Prefecture

Age in months	Group by length of bed rest	Umakawa(*Kan*)		Regional surveys(*Kan*)		Variation from the Average value		Number of infants		Weighted average value of the variation
		Male	Female	Male	Female	Male	Female	Male	Female	
1–2 months	3	1.600		1.292	1.209	0.308		1	0	0.308
2–3 months	3	1.323	1.425	1.487	1.361	-0.164	0.064	3	4	-0.034
3–4 months	3	1.025	1.800	1.612	1.528	-0.587	0.272	2	1	-0.301
4–5 months	3	1.507	1.450	1.723	1.625	-0.216	-0.175	3	2	-0.200
5–6 months	3	2.100	1.800	1.817	1.761	0.283	0.039	2	1	0.202
6–7 months	3	2.025	1.400	1.881	1.719	0.144	-0.319	2	1	-0.010
7–8 months	3	2.000	1.933	1.903	1.854	0.097	0.079	1	3	0.084
8–9 months	3	2.050	1.900	1.988	1.823	0.062	0.077	1	1	0.069
9–10 months	3	2.100	1.700	1.940	1.918	0.16	-0.218	2	1	0.034
10–11 months	3	-	-	2.083	1.959	-	-	0	0	-
11–12 months	3	1.800	1.685	2.139	1.922	-0.339	-0.237	1	2	-0.271

Source Writer's figures. The data for Umakawa is from "Table 16: Weight, height, and circumferences of chest and head classified according to physical condition and age" (Umakawa Report, p. 38, listed in the appendix of the Japanese original); the regional data from "Table 16: Weight, height, and circumferences of chest and head classified according to physical condition and age (regional surveys)" (Shimizu 1990, p. 489)
Note Kan is converted to 3.75 kg

Next, it was thought desirable to calculate one numerical value for the variations from average value that had been separately recorded for males and females, and so weighted averages were calculated according to the number of infants of each sex. For example, the variation from the average value of male infants aged two months and above (two months and over but less than three) was −0.164, the number of infants was three, and the value gained from multiplying by 3 was −0.492. The variation value for females was 0.064, and there were four of them, so the new value was 0.256. The weighted average value of the variation was calculated by adding the variation values for males and females, −0.236, and dividing this by the total of infants (4 + 3), to give −0.034. The weighted average values of the variations by age in months for each village were treated as growth indicators for ages in months.

The averages of these monthly weighted average values of variation are given in Table 3.4, divided according to the threefold divisions of ambulation that were introduced in Sect. 3.3.1. To prove the proposition that there was a correlation between later ambulation and positive growth outcomes, a variance analysis was carried out to see if there were variations in the averages of the weighted average values of variation when they were divided according to the timing of ambulation. The results showed that there were no statistically significant differences in the average values of the weighted average values of the variations between groups (2) and (3), but that statistically significant differences existed in the numerical values for (1) and (2), and (1) and (3).[4] This shows that the developmental outcomes for post-neonatal infants were worse in villages in group (1), where the timing of ambulation was earlier than customary rules, than in those in groups (2) and (3), where the timing was relatively longer.

Table 3.4 Averages of weighted average values of variation according to bed rest group

Bed rest group	Frequency	Average of weighted average value of variation	Standard deviation
(1)	115	-0.10	0.23
(2)	63	0.01	0.19
(3)	52	0.06	0.17
Total	230	-0.04	0.22

Source Writer's figures

[4]Due to verification of homoscedasticity, it seems reasonable to assume a variance equal to the weighted average value of variation for each of the three ambulation groups, (Levene test for equality of variance 1.100, p value 0.335). As a result of variant analysis, a statistically significant variance was found in the weighted average value of variation according to ambulation group ($F(2,227) = 13.747$, $p < 0.001$). Further, multiple comparisons using Fisher's LSD method showed that there were variations in the weighted average value of variation between the ambulation groups of (1) < (2) for (1) and (2), and (1) < (3) for (1) and (3).

3.4 A Proposition Regarding the Influence of Childrearing Practices on Infant Development

3.4.1 An Examination of the Implications, and Presentation of the Proposition

First it is necessary to examine the implications that can be made from the positive correlations that can be found between lengths of postpartum recovery periods and post-neonatal infant development when the timing of ambulation is viewed as a proxy variable. Part 3 demonstrated that in farming communities in the Taishō period, ambulation occurred at the earliest from a few days after delivery, and at the latest, after three weeks. Since this is less than one month post partum there is no overlap whatsoever with the post-neonatal stage, yet for some reason it is from this post-neonatal stage that the growth of infants whose mothers experience early ambulation begins to show a deterioration.

To solve this riddle, first it is necessary to investigate the influence that early ambulation might have on the growth of post neonatal infants via the mother's body.[5] In other words, it is possible that infant growth was negatively affected because early ambulation harmed maternal health (since a short recovery period was likely to mean an early return to work), and this lead to difficulties in maternal childrearing. However, if this were the case, the influence on growth would be likely to appear soon after birth. Yet, as was made clear in Part 2, it was not until several months after the neonatal stage that deterioration in growth became evident. This being the case, it seems unlikely that early ambulation had a great effect on infant growth via the mother's body.

The reasoning behind this can be tested by using the data introduced in the previous part to check whether variations in growth linked to differences in the timing of ambulation developed in infants of less than six months (early infancy) and/or in infants of more than six months (late infancy). As was established in Sect. 3.3.2, there was no statistically significant difference between the growth indicators for infants whose mothers began ambulating at the time stipulated by customary rules (group (2)) and those whose mothers began ambulating at a later time (group (3)). These two groups can therefore be amalgamated. Then growth indicators were divided according to early and late infancy and validation of the variation in average values (the t test) was performed to determine whether there were variations between group

[5] Early resumption of work, fatigue and loss of stamina have been cited as agents that worsen conditions such as subinvolution of the uterus and puerperal fever (Imazu 2006, pp. 76, 78). Moreover, expectant and nursing mothers in farming communities during the Taishō period had a high mortality rate, at 317 per 100,000 births. The figures for births and maternal mortality used to produce this mortality rate were taken from Shimizu (1990, p. 589). In "Table 12: Deaths classified according to sex, cause of death, and age", the prefectural surveys gave the number of deaths caused by "pregnancy and childbirth" (the maternal mortality rate) in the ten years preceding the time of the survey as 179, out of a total number of 56,483 births ("Table 5: Resident population, deaths, stillbirths and live births classified according to permanent residence", Shimizu 1990, p. 589).

(1), where ambulating began earlier than customary rules, and the rest, that is groups (2) and (3). The result was that in growth indicators according to these groups, a statistically significant variation was found only in the case of late infancy.[6]

It has therefore been confirmed that it was only in late infancy that a correlation between early ambulation and growth deterioration appeared. However, it is not clear how this lapse in time between the occurrence of ambulation and the appearance of growth deterioration should be interpreted. If it is not something that occurred purely by chance, a proxy variable of some unknown parameter must be at work. In Part 1 it was observed that in farming communities as well as in urban areas, it was likely that any increase in the workload would shorten the time spent on childrearing as well as the period of post partum recovery. It is possible to surmise that any negative effect of reduced time spent on childrearing would be gradual and cumulative, and might therefore only become obvious in late infancy. In other words, there are ample grounds for viewing time spent on childrearing as the "unknown parameter". It is therefore possible to make use of the observed correlation between ambulation and growth to build the proposition that when women in the farming communities of Taishō Japan faced an excessive workload, the result was a reduction in the time spent on childrearing as well as in the length of the postpartum recovery period, and that this was the cause of decreased growth in late infancy.

3.4.2 Development of the Proposition

In Sect. 3.4.1 it was proposed that a reduction in childrearing time caused decreased growth in late infancy. In fact, Part 2 included suggestions of the way in which childrearing could have such results, in the form of breastfeeding practices.[7] If the proposition is rewritten to include this suggestion, it turns into the idea that when women in farming communities in Taishō Japan faced an excessive workload, the result was a reduction in the time spent on breastfeeding as well as a reduction in the length of the postpartum recovery period, and that this was the cause of decreased

[6]For late infancy (from six months), the sample size for group (1) (shorter than customary rules) is 67, and the average value of growth indicators is −0.057 (standard deviation 0.028), while for the total of groups (2) and (3), the sample size is 75 and the average value of growth indicators is +0.017 (standard deviation 0.024). The variation in average value between the two groups is statistically significant. ($t = -2.014$, $df = 140$, $p < 0.05$).

[7]Judging by the items included in the surveys, it appears that at the time of the health and hygiene field investigations in farming communities, it was thought that bottle feeding might be linked to high infant mortality rates, but no consideration was given to the possibility that there might be any problem with breast milk or breastfeeding. It was only in the late 1920s, after these surveys had finished, that concern began to be directed towards breast milk. In 1939 there was a nationwide survey of farming communities that looked into the frequency of breastfeeding times and the feeding methods that were adopted when mothers could not produce sufficient milk (Ai'iku Kenkyūjo 1943). This was also when research into breast milk began. For example, Komiyama (1942) and Takahashi (1941) pointed to the insufficient production of breast milk in farming communities, while Hayashi (1942) pointed to low frequencies of breastfeeding as well as insufficient production.

growth in late infancy. To prove the viability of this proposition it is necessary to show that (1) increased workloads led to reductions in breastfeeding time, and that (2) when reductions in breastfeeding time occur, decreased growth is limited to late infancy.

The 120 reports of health and hygiene field work investigations into villages or large subsections of villages that had been collected by the writer were searched in order to find references to breast feeding in entries such as "Conditions related to pregnancy, childbirth and breastfeeding" or "Customs related to the care of infants". However, there were many reports which either contained no references to childrearing in these entries, or stated that "there is nothing worthy of note regarding childrearing", or "there are no customs regarding childrearing that are worthy of note". Only in the case of six villages did the reports contain references that allowed inferences to be made regarding the frequency of breastfeeding during farm work. This is the information recorded in Table 3.2 in the lower rows of the rows in column 4 in that are divided into two. In the village of Umakawa (No. 2) infants were left with their mothers; during farm work they were either carried on their mothers' backs or put in *ezume* (baby baskets). It seems safe to conclude that infants were taken by the mother to the place where the farm work was being done, and breast fed as the need arose. By contrast, in Amatsu (No. 3) mothers left their babies with the parents-in-law and spent the day working in the fields with total "disregard", so that during their time in the fields they would only breastfeed three times; in other words, feeding took place before noon, at noon and in the afternoon, and apart from that before or after work in the fields, that is, in the morning, in the evening, and at night: a total of about six times. In Yoshino (No. 4), infants were not taken to the fields, and were "not given any milk" after the morning feed until the mother returned to the house for lunch. If the same happened in the afternoon, this would mean that no feeding occurred after that until the evening, meaning that infants were fed about four times in total (in the morning, at noon, in the evening and at night)—less than Amatsu. In Mimi (No. 5), it was said that "when farm work is at a peak, feeding only takes place in the morning and at noon", so it would seem that the number of feeds is around four, as was the case with Yoshino. In Fuse (No. 6), on the other hand, feeds seem to have been more frequent since the comment was "comes home from time to time". In Naka (No. 8), the mother would either "return home from time to time" or "leave the baby at home with old people or young children" and get them to bring it "to the fields from time to time".

In sum, in all the villages except Umakawa (No. 2), mothers engaged in farm work left the care of infants to family members, and fed them "from time to time", by having the infants brought to where they were working or by going home for that purpose, or only when they went home for meals or for some other reason. It can be surmised that leaving infants with family members while they were working and reducing the number of feeds allowed mothers to spend more time in farm work. This suggests that there is justification for the idea that increases in the workload reduced the amount of time spent in breastfeeding.

Second, it is necessary to establish whether fewer opportunities to breastfeed (reduced breastfeeding time) can lead to decreased growth. According to Andō and Yamashita (1984, p. 118), the standard number of feeding today for infants from three months until late infancy is five times per day (about every four hours). In other words, the four to six feeds per day mentioned in the reports that are introduced above are not particularly few for late infancy; in fact, they are around the standard number for today. Moreover, they are around the same number as the feeds given to infants who are swaddled, a practice that Rousseau equated with neglect. According to research into the Bolivian Aymara (Masataka 1999, pp. 2–7, 12–14), infants aged three to eight months who are swaddled are fed every four hours, in other words, five times per day. Infants who are not swaddled are fed around twice as many times, at every two hours, but the amount of time spent on each feed is nearly ten minutes longer in the case of swaddled infants, so that there is said to be no difference in the overall intake of breast milk.[8] In the example of the village of Yoshino (No. 4) referred to above, it is stated that "after breast feeding mothers go out to the fields" and work until lunch. Even if infants were only fed four times per day, it would therefore have been possible to compensate for the lower incidence of feeding by taking more time over each feed.

Nevertheless, it is still necessary to check whether there is any correlation between feeding 4–6 times per day and growth in late infancy. One important consideration is the remark in the report of the Aymara survey mentioned above that "continued swaddling-type breastfeeding seems to lead to an early decline in the secretion of breast milk." According to Masataka (1999, pp. 15–16), apparently feeding five times per day causes breast milk to begin to "dry up" early, so that weaning begins from the age of six months. Andō and Yamashita (1984, p. 131) also state that in Japan, where babies from three months are fed five times per day, "it makes sense to start weaning at five months." As far as breastfeeding is concerned, it seems clear that if breastfeeding from the age of around three months continues to occur around five times per day, there is a relatively early decline in the milk supply and the amounts cease to provide sufficient nourishment for the late stage of infancy. If the traditional Tokugawa period childrearing methods taught by doctors such as Kazuki Gyūzan (1656–1740) (Kazuki 1714, reprint by Yamazumi et al. 1976) were being followed, and infants were being fed only breast milk for the first year after birth, as was demonstrated in Part 2, regardless of the fact that the supply had decreased, it is not surprising that their growth was negatively affected. Kazuki wrote:

> As for beginning solid food, one should wait until after six months, or around ten months, when the first teeth have appeared before deciding to start. …Until around eighteen months feed mainly milk, with only small amounts of solids. From around three until four years, it is fitting to feed mainly solids, with only small amounts of milk (Yamazumi et al. 1976, p. 321).

[8]The numerical values for the time spent on breastfeeding are taken from Graph 2 on p. 13 in Masataka (1999).

It is therefore clear that the decline in the supply of breast milk described above provides the link between the limited number of breast feeds per day and low growth levels. This new evidence requires some adjustment of the proposition as follows: In farming communities in Taishō Japan, women faced with an excessive workload ensured that they could work long hours not only by shortening the period of postpartum recovery, but by leaving the care of infants to family members during work hours and reducing the number of times that they fed their babies. Further, the reduced number of feeding periods led the flow of breast milk to decline from sooner after childbirth. Since traditional childrearing practices were followed, in the sense of feeding babies only with milk from the mother, despite this decline, there was a decrease in the amount of milk that infants could consume and this led to decreased growth in late infancy.

3.5 Summary and Topics for Further Research

This chapter has examined the correlations between infant growth and childrearing practices in farming communities in Taishō Japan. First it was shown that deterioration in growth began from the end of early infancy or from late infancy. It was thought that from the viewpoint of nutrient intake, the cause must lie either with the mother's breast milk, or with breastfeeding practices. Next, it was shown that ambulation, used as a proxy variable of the postpartum recovery period, was beginning earlier than the time prescribed by customary rules, and that there was a correlation between early ambulation and decreased growth in late infancy. As a result, the timing of ambulation was treated as a proxy variable of the time spent on childrearing and it was proposed that shortening of the time that mothers spent on childrearing each day was the cause of this decreased growth. The proposition was further developed on the assumption that breastfeeding practices could be seen as practical evidence of maternal childrearing. The revised proposition was that growth in late infancy deteriorated because the traditional method of childrearing of Tokugawa Japan—total dependence on the mother's milk—was continued even though the limitation in the number of feedings was causing an early decline in the production of breast milk.

Since decreased growth in late infancy, when maternally transmitted immunity begins to weaken, causes a fall in resistance to pathogens, it raises the incidence of both non-communicable diseases and acute communicable diseases of the respiratory and digestive systems. It is therefore likely to have greatly influenced infant mortality rates.[9] Testing the validity of the proposition developed here will therefore involve clarification of the causes behind the high infant mortality rate in farming communi-

[9]Malnutrition continued to be a cause of infant deaths in Japan until around 1950. Indigestion during the period of weaning frequently developed into lienteric toxicosis, resulting in death. In fact, this was a major reason for infant mortality, with malnutrition said to have been the primary cause (Futaki 1989, pp. 1–2, "Introduction"). The general causal relationship between decreased growth (malnutrition) and infant mortality rates, particularly after the neonatal stage, presumably applies to the Taishō period as well.

ties in Taishō Japan. This testing process, with its connotations, is one topic for the writer to pursue in the future. An additional topic is the examination of the actual effect of farm work on maternal physical health and breast milk. When immunity against pathogens had fallen, the incidence of disease mentioned above must have influenced deaths caused by illness, and therefore mortality rates. The writer will therefore also examine the disease-related environment in Taishō period farm communities, and the level of medical and nursing techniques.

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Chapter 4
Changes in Female Height and Age of Menarche in Modern Japan, 1870s–1980s: Reconsideration of Living Standards During the Interwar Period

Ken'ichi Tomobe

Abstract This paper aims to show the trends and fluctuations of mean age at menarche from the 1880s to 1980s by using two kinds of menarche data collected by hospitals, volunteer organizations, private companies and so on: one is primary research data and the other are cited data in journals and books. Three findings emerge. (1) The long-term trend in the mean age at menarche was relatively stable at around the latter half of age 14 until the 1940s and afterward steadily declined to 12 years old in the 1980s. (2) The mean age at menarche showed a statistically significant decline even during the 1920s and 1930s in the case of students and mill workers; and (3) the velocity of height growth of both boys and girls was mostly increasing until the 1930s, and was at its maximum during the 1920s. These findings enable us to reconsider the conventional view of living standards and economic recession during the interwar period in Japan by analyzing not only economic but also anthropometric indices.

Keywords Mean age at menarche · Height · Economic recession · Anthropometrics · Living standard

4.1 Introduction

The mean age at menarche is an important female anthropometric index. By showing a clear relationship between nutrition and the age of menarche in the context of monetary earnings in contemporary developing countries, it enables us to understand patterns of physiological growth of specific human sample populations (Knaul 2000). However, we have very few cases that clearly demonstrate the same relationship in

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the context of historical economies, excepting the case of slave economies (Steckel 2016). Menarche is fundamentally an outcome of individual hormone secretion and one of several physiological and physical changes of adolescence. Most girls are likely to remember their age at menarche because it was a dramatic event for them.

According to human physiological studies, the age at menarche usually comes about one year after the age at PHV, Peak-Height-growth-Velocity. In the area of historical research on the mean age at menarche, there are two typical types of research. The first is anecdotal history in which historians approach individual life courses based on individual growth data found, for example, in diaries in historical Europe (Komlos 1989a, Ch. 1. 1989b). The other is an analytical history mean age at menarche of sample populations based on an accumulation of as many sample cases as possible, like those undertaken regarding early twentieth-century Japan (Moriyama et al. 1980; Nakamura 1986). The difference between them in analytical method arises out of the difference in the historical materials available to historians. The research on Japan in particular, because it is based on statistical observations of the mean age at menarche, has focused on precise evaluations of the starting age of puberty beginning in the late nineteenth century. This paper uses the same method of collecting data as Nakamura and Moriyama, but differs from theirs in both the system and the content of the database.

Thus far, both in historical and development studies, historical demographers and economists have paid considerable attention to the mean age at menarche in order to estimate proximate determinants of human fertility (Bongaarts et al. 1983, Ch. 2; Frisch 2002; Tomobe 2002). These estimates appear to show, however, that the demographic impact of the later age at menarche can be quite small. At the same time, it seems clear the indices of *SES*-socioeconomic status, including household income, father's occupation, parents' education, family size, and so on contribute significantly to growth patterns including the age at menarche.

Additionally, many anthropometric historical studies have focused on the standard of living in various countries based mainly on data on height and weight of sample populations of males around age twenty (Komlos 1994, 1995, 1998a, b). Very few studies of anthropometric history focus on the physiological phase of female adolescent populations measured by the age at menarche. Careful research is needed on how wives and female children were treated in their households with a focus on certain of the harsh aspects of their lives because, given cultural systems of household formation such as the Japanese *ie* system, they likely occupied a position weaker than those of their husbands and male children.[1]

This paper seeks to evaluate changes of biological standards of living in modern Japan by highlighting the changes in the mean age at menarche found in samples of Japanese girls researched between the 1870s and the 1980s. This evaluation leads to a reconsideration of the significance of Japan's rural recession from the 1900s to just

[1] We need to test the hypothesis in its specific historical context. For example, it is believed that the Japanese household formation system (*ie*) had a very skewed system of distributing food between males and females, but recently several historical studies have tried to test the primary status of eldest male children in the rural Japanese *ie* system.

before the start of the Second Sino-Japanese War in the 1930s, and to a reassessment of the standard of living in Japan during the same period. In addition, this paper shows the shape and spurt velocity of height growth in Japan's adolescent population using the statistical data compiled by the Ministry of Education in Japan (Mosk 1996). The first section of the paper shows the process of formulating the data on the mean age at menarche in modern Japan with reference to the new database created to undertake this. Based on these data, the second section shows changing patterns of the mean age at menarche by prefecture and occupation respectively. Finally, this paper presents some concluding remarks on the implications of the biological standard of living in Japan from the 1900s to the 1930s.

4.2 Research Framework

Both serial changes over time and cross-sectional differences in *SES* are crucial issues in research on the mean age at menarche. Several types of evidence indicate that *SES* is associated with delays in the age at menarche (Bongaarts et al. 1983, pp. 14–15; Scott and Duncan 2002, pp. 95–96).

(1) In general, the mean ages at menarche in developing and developed countries differ by a few years.
(2) A clear relationship between nutritional intake and the age at menarche appeared in a historical study of the United States. According to the study, well-nourished girls reached menarche 2 years earlier than undernourished ones.
(3) In western societies with relatively reliable historical data, the age at menarche has declined by about 3 years since the end of the nineteenth century. This decline coincided with increases in body size and improvements in diet.

Although in many cases SES and the age at menarche are negatively correlated, what does the age at menarche as an anthropometric index suggest regarding the biological standard of living in historical populations? In considering this question, we need to think about the cultural condition and historical context of the places being analyzed for their historical standards of living. This paper evaluates the biological standard of living shared within Japan's historical family households, the *ie* stem family system, in which the income and product of each household member was pooled and then redistributed to household members based on decisions about the capability and function of each member, with these roles remaining until the next successor to the household headship was decided on (Sen 1985).[2] As seen in Fig. 4.1, the rise in real wage rates usually led to an increase in pooled household income. This relationship, however, did not guarantee an increase in per capita nutritional

[2]To think properly of the standard of living shared in the economies of early modern Japan's peasant households, we must bear in mind that household members were engaged in various earning activities based on gender and age divisions of labor, including cultivation, by-employment, and casual labor. When the next household head was decided upon, other household members in principal left the household.

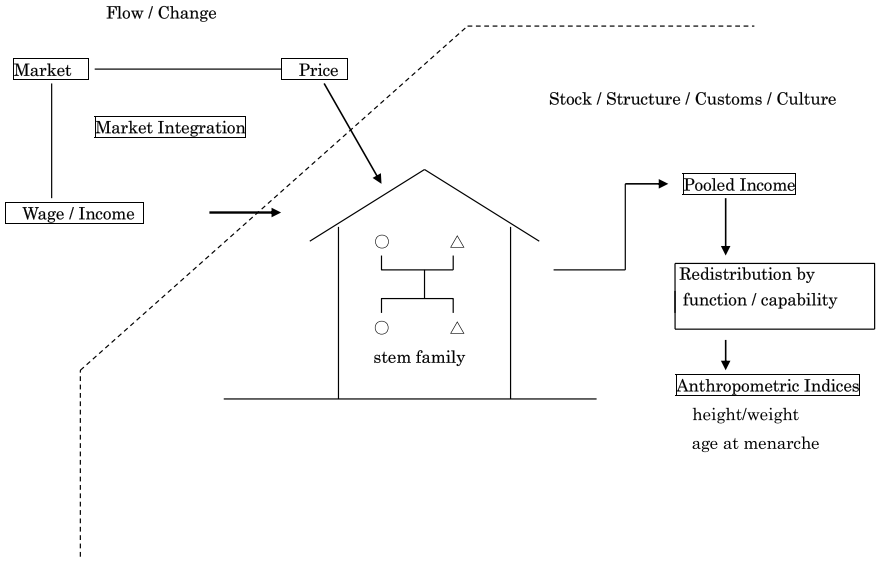

Fig. 4.1 Market economy and anthropometric indices the case of Japan's stem family (*ie*) household

intake within the household, especially for boys and girls. Because both boys and girls have increased appetite just before the age of their growth spurts (Frisch 2002, p. 26), their nutritional intake per capita contributed to the start of puberty.

The rise of total pooled household income probably led to a concomitant growth in both the functioning and the capability of the household (Sen 1985). However, the redistribution mechanism in the household did not operate evenly with regard to all family members. The age at menarche, because it is affected by nutritional intake during the period of adolescence, is a substantial indicator of the individual standard of living within households.

The issue of the redistribution mechanism within the household is especially important when we think about the historical standard of living in modern Japan. According to the historiography of interwar Japan's economic history, historians have traditionally believed, though without robust quantitative evidence, that the Japanese economy stagnated during the interwar period. Because of the many political disturbances and uncontrolled military expansion of the time, the mass media highlighted and emphasized the dark recessionary quality of the social state of interwar Japan. More recently, however, economic history analyses of reliable quantitative data have shed light on aspects of a growing Japanese economy (e.g. Tomobe 2007, Ch. 6). In particular, the research on development of Japan's labour markets from the 1900s to the 1940s, based on an Error–Correction–Model analysis, shows that: (1) the number of co-integrated local labour markets grew from the 1900s to the 1930s; and (2) the 1920s in particular showed both increasing real wages and growing market integration (Saito et al. 2004; Tomobe 2010, pp. 171–174).

At the same time, cultural or intellectual studies of interwar rural Japan lead to the same conclusion as the above labour market analysis. The 1920s and 1930s coincided with the period when, through the national movement of rural reform that had been launched around 1908, Japan's peasants gained certain modern skills and information that contributed to a more comfortable ordinary rural life. Among the areas overlooked thus far by historians has been the social aspects that improved rural life, in which central and local governments and volunteers brought educational activities to peasants such as films explaining epidemic prevention and general hygiene (e.g. Yumoto 2000).[3] These activities surely contributed to a decline in the energy used to fight disease, unsanitary practices, and psychological anxiety. They thus contributed to a net increase of Japanese peasants' nutritional status.

4.3 Data and Analysis

4.3.1 Structure and Variety of Sample Data

In Japan, at least, we have not until this point seen any official and continuous national statistics on the age at menarche. Rather, the Japanese government's compilations of annual physical statistics were those measured at the physical examination for conscription (*Chōhei kensa*) performed by each branch of the military during the pre-war period. Accordingly, various types of research on the age at menarche in prewar Japan were undertaken independently by private companies and hospitals. For example, medical doctors or scientists conducted their research through questionnaires given to girls' school students. Some obstetricians collected data through interviews of patients during medical examination. Their inquiries made it possible to learn about women's body changes. Fortunately, though unofficial, these data were opened to the public through published papers that are available to us even now. For the present study, the papers containing research results from the 1880s forward on the age at menarche were collected to the extent possible. As a result, this study used 76 papers to build a database of the following items as found in each of the research papers (Tomobe 2007: list of samples in Japanese).

(1) Mean age at menarche
(2) Sample size
(3) Research year
(4) Place carrying out the research (prefecture)
(5) Attributes of sample population

[3]Recently, many social historians of Japan have started working on this issue. For example, a local Eisei-kai [Hygiene Society] in Nagano Prefecture offered important activities from the 1900s to the 1940s, including (1) screenings and discussions of hygiene films, (2) simple education/skills for midwifery, (3) epidemic/local disease prevention, (4) distribution of pamphlets on hygiene and so on.

For a stricter analysis of changes in the mean age at menarche, we need not only the date and place of research but also the age distribution of the sample population. Only a few papers among the 76 meet this standard. In general, our samples found that some research was applied to all fifth grade students under the prewar junior high school system while others surveyed all married women admitted to hospitals as patients. Most of our samples, fortunately, had a stable age distribution of women aged 12–15. Two types of data appeared in the research papers: primary data collected by the researchers themselves, and cited data researched by others. The present paper collected both types of data as they appeared in the 76 research papers.

Table 4.1 shows the research year, the publication year, and whether the type of data collected was primary or cited data. As seen in Table 4.1, the first research year was 1871 and the last was 1987. Therefore, the number of samples amounts to 558 in all. All samples include information on research year, publication year and research place (prefecture).

Let us examine the samples cited in this paper. Table 4.2 shows the availability of primary data and of cited data. The total number of samples in the group is 558. Consequently, we see from Table 4.2 that 404 samples have information on sample size, and 154 samples do not. As this table indicates, the samples published before 1928 include information on sample size. From 1929 to 1959, most of the samples without information on sample size were cited data.

4.3.2 Trends and Fluctuations of Mean Age at Menarche

Based Mean Age at Menarche on the 558 samples that appear in Tables 4.1 and 4.2, Fig. 4.2 shows the secular trends and fluctuations of the mean age at menarche of all samples, while Fig. 4.3 shows the fluctuations by category of sample such as students, workers, and pregnant women. With some scattering of data points, Fig. 4.2 shows an overall trend toward decline of the mean age at menarche as the years approach the present day. In Fig. 4.3, both “Students” and “Unknown and Others” show a similar trend. On the other hand, “Mill-girls” and “Office Workers” show a more even distribution from age 14–17, rather than a concentration in the younger age zone. The differences between these cases, though the sample sizes are small, suggest the possibility that the physical stress of labour puts something of a strain on women’s bodies and tends to raise the age at menarche. Further, the case of “Pregnant Women and Adult Females” show hardly any scattering from the 1880s to the 1960s. The mean age at menarche in this category seems almost stable. This is probably the result of inaccurate memories of the actual date of menarche.

To present a comprehensive view of the trends in the mean age of menarche, this figure is based only on those samples that include information on sample size, with each dot in Fig. 4.4a indicating the research outcome with sample size on the Y-axis and research year on the X-axis. Most of the studies done before 1920 have larger sample size and the number of research studies increases rapidly after 1920 with

widening range of sample size. The sample size after WWII is larger than those of the prewar period, with some 1960 studies involving more than 100,000 people.

Figure 4.4b shows the regional distribution of samples with the sample size on the Y-axis and the prefectures on the X-axis. Clearly, many research studies were done in Tokyo (Prefecture No. 13). Research done in eastern Japan (Nos. 1–23) tends to have smaller sample sizes that done in western Japan (Nos. 24–47). This feature of the distribution makes it unsuitable for cross-sectional analysis. Instead, Fig. 4.5 presents calculations of the trend of arithmetic mean age at menarche of all the samples. First, it seems clear that the mean age at menarche fell after 1946. As the post-war Japanese economy recovered and grew, the nutritional status of Japanese women improved significantly. According to C. Mosk's findings, calcium and fat consumption increased, contributing to the physical growth of Japanese people (Mosk 1996, Ch. 5).

At first glance, the pre-WWII trend seems constant. Some smaller fluctuations, however, can be seen even in the prewar period. Note the downward trend from 1923 to 1942. This downward trend and the postwar decline can be interpreted as part of a continuous process. In other words, although there was a slight rise during 1942–46 due to worsening conditions during wartime, age at menarche had already started declining from the early 1920s. Table 4.3 summarizes the basic statistics on average age at menarche calculated from our samples to give a clear view of the trends. Surprisingly, the average age at menarche from the 1870s to 1940s had been very stable, fluctuating around the latter half of age 14. The transitional period of the 1950s and 1960s shows a rapid decline of mean age but a much larger S.D. Thereafter, the mean age declined until the latter half of age 12 with only a very small S.D., meaning that the age at menarche in Japan shifted into a long-term stage of lower stability, or stability at a lower age. Related to the main purpose of the paper, the statistics during the 1910s, 1920s and 1930s show comparatively stable changes in the decline of mean age. They seem in consonance with the normal process of declining mean age at menarche rather than indications of severe economic recession.

Before confirming the reliability of the statistical outcomes, let us examine three hypotheses of the physiologies affecting menarche: (1) marginal height, (2) marginal weight, (3) marginal proportion of skinfold thickness. This paper supports the third hypothesis, marginal thickness, based on Rose Frisch's research on the relationship between height and weight (Frisch 2002, Ch. 6). First, by using the *Nōson Hoken Eisei Chōsa* [Rural health and hygiene research] published in 1929, which was based on early 1920s rural surveys that contained precise information of height and weight in Taishō-era rural Japan, we can test the Frisch method and the validity of applying her hypothesis to samples from rural Japan at that time.

Table 4.4 shows the evidence of the validity of the Frisch hypothesis. The figures in Table 4.4 show weights corresponding to each percentile of rural girls who have already experienced menarche. For example, in the age 14–15 category, which is very close to our sample's statistical mean age at menarche, the 50th percentile weight of model 1 is 38.5 kg and the 75th percentile is 41.7 kg. Because the real average weight in Taishō-era rural Japan was 39.6 kg, model 1 fits the Frisch hypothesis. Likewise model 1 fits the hypothesis to a much greater degree than model 2 does.

Table 4.1 Matrix of samples cited by Year Researched and Year Published in Japan, 1871–1990

Research year \ Published year	1906	1908	1910	1912	1916	1925	1926	1927	1929	1930	1931		1932		1938	1943	1944	1948
	Original	Original	Original	Original	Original	Original	Original	Original	Original	Original	Original	Cited	Original	Cited	Original	Original	Original	Original
1871			1															
1884												1						
1888				4														
1889												1						
1900	1																	
1904												3						
1905		4																
1906	1											4						
1907												1						
1908												1						
1910									1			2						
1911												1						
1912												1						
1913					8							2						
1916												1						
1920												1						
1921												1						
1922												1						
1923									1				1					
1924						1						1						
1925							28											
1926								1				2		1				
1927								2				2						
1928										17		2		1				
1929									1			5	1	1				
1930											2	1						
1931													2	1				
1932													1					
1933																		
1934																		
1935															1			
1936																		
1937																		
1938																		
1939																		

(continued)

Table 4.1 (continued)

1940																1	1	
1941																		
1942																		
1943																		
1944																		
1945																		
1946																		
1947																		1
1948																		1
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1975																		
1977																		
1982																		
1987																		
Total	2	4	1	4	8	1	28	3	3	17	2	34	5	4	1	1	1	2

(continued)

Table 4.1 (continued)

Research year \ Published year	1949		1950		1951		1952		1953		1954		1955		1956		1957		1958		1959		1960	
	Original		Original	Cited	Original	Cited	Original		Original	Cited	Original		Original		Original		Original	Cited	Original		Original	Cited	Original	Cited
1871										1														
1884																								
1888										1														
1889										3											1			
1900				1																		1		
1904										4														
1905										1														
1906										2														
1907				1						1														
1908										1														
1910										2														
1911										1														
1912										2														
1913										1														
1916										1														
1920										1														
1921				1						1											1			
1922																								
1923				1																				
1924																						1		
1925										2														
1926				1																	1			
1927			1				2			1														
1928				2			2			3													2	
1929							2																1	
1930							2																2	
1931							2														1			
1932							2			1														
1933						2	2																1	
1934							2														1		1	
1935							2																	
1936				1			2			1														
1937							2		1															
1938						1	2																	
1939							2																	

(continued)

Table 4.1 (continued)

1940						2							2					
1941					2	2									1			2
1942						2										1		1
1943						2							2					
1944						2												3
1945						2												
1946						2												1
1947				2	1	2												2
1948	1			2	1	2												
1949				1		2												1
1950	1					2												5
1951						9									1			6
1952						1			1									5
1953										1	3				1	1		2
1954											1	1		1				7
1955												4			1			2
1956												1		1			1	2
1957												1		1	1	1		2
1958														3	1		1	
1959															5		1	1
1960																		
1961																		
1962																		
1963																		
1964																		
1966																		
1967																		
1968																		
1969																		
1970																		
1971																		
1972																		
1973																		
1975																		
1977																		
1982																		
1987																		
Total	2	1	8	5	7	58	1	27	1	1	4	7	4	6	16	4	3	50

(continued)

Table 4.1 (continued)

Research year \ Published year	1961	1963		1965	1966		1968	1969	1970	1971		1973	1977		1990	Sub-total		Total
	Original	Original	Cited	Original	Original	Cited	Original	Original	Original	Original	Cited	Original	Original	Cited	Original	Original	Cited	
1871																1	0	1
1884																0	2	2
1888																4	0	4
1889																0	2	2
1900																1	0	1
1904																1	7	8
1905																4	0	4
1906																1	8	9
1907																0	2	2
1908																0	1	1
1910																1	5	6
1911																0	1	1
1912																0	2	2
1913																8	4	12
1916																0	2	2
1920																0	2	2
1921																0	2	2
1922																1	3	4
1923											1					2	1	3
1924																1	2	3
1925											1					28	1	29
1926											1					1	7	8
1927			1								1					5	5	10
1928																20	4	24
1929			2								9			2		4	26	30
1930			1			1					1			1		4	6	10
1931																4	3	7
1932											1					4	1	5
1933																2	1	3
1934																2	3	5
1935			1													3	2	5
1936						1										3	1	4
1937			1								2					3	5	8
1938																2	1	3
1939																2	1	3

(continued)

Table 4.1 (continued)

1940																4	2	6
1941			1											1		3	6	9
1942											1			1		2	4	6
1943														2		2	4	6
1944						1								1		2	5	7
1945																2	0	2
1946																2	1	3
1947																5	3	8
1948						1								1		6	3	9
1949						1								1		3	3	6
1950						1					2			2		3	10	13
1951			2			1					4			4		10	17	27
1952						4					4			4		2	17	19
1953		1				1					1			2		6	7	13
1954						1					3	1		2		4	13	17
1955						1										5	3	8
1956											3			2		3	7	10
1957	1													1		4	4	8
1958						2	1							1		6	3	9
1959					1									3		7	4	11
1960	1					1								1		1	2	3
1961											3			2	1	1	5	6
1962				1	1	2								1		2	3	5
1963						1								1		0	2	2
1964					1	1								1	1	2	2	4
1966														1		0	1	1
1967								1						1	1	2	1	3
1968														1		0	1	1
1969									2					1		2	1	3
1970										2				1		2	1	3
1971														3		0	3	3
1972															1	1	0	1
1973												1				1	0	1
1975													2	1		2	1	3
1977															1	1	0	1
1982															48	48	0	48
1987															48	48	0	48
Total	2	1	9	1	3	21	1	1	2	2	38	2	2	46	101	306	252	558

Table 4.2 Classification of samples cited in this paper

Research year	Available			Unavailable		
	Original	Cited	Total	Original	Cited	Total
1871	1		1			0
1884		2	2			0
1888	4		4			0
1889		2	2			0
1900	1		1			0
1904	1	7	8			0
1905	4		4			0
1906	1	8	9			0
1907		2	2			0
1908		1	1			0
1910	1	5	6			0
1911		1	1			0
1912		2	2			0
1913	8	4	12			0
1916		2	2			0
1920		2	2			0
1921		2	2			0
1922	1	3	4			0
1923	2	1	3			0
1924	1	2	3			0
1925	28	1	29			0
1926	1	7	8			0
1927	5	5	10			0
1928	20	4	24			0
1929	4	24	28		2	2
1930	4	5	9		1	1
1931	4	1	5		2	2
1932	4	1	5			0
1933	2	1	3			0
1934	2		2		3	3
1935	3	1	4		1	1
1936	3	1	4			0
1937	3	5	8			0
1938	2		2		1	1
1939	2		2		1	1

(continued)

Table 4.2 (continued)

Research year	Available			Unavailable		
	Original	Cited	Total	Original	Cited	Total
1940	4	2	6			0
1941	3	2	5		4	4
1942	2	3	5		1	1
1943	2	3	5		1	1
1944	2	2	4		3	3
1945	2		2			0
1946	2		2		1	1
1947	5		5		3	3
1948	5	3	8	1		1
1949	3	2	5		1	1
1950	3	5	8		5	5
1951	10	11	21		6	6
1952	2	12	14		5	5
1953	6	5	11		2	2
1954	4	6	10		7	7
1955	5	1	6		2	2
1956	3	5	8		2	2
1957	4	2	6		2	2
1958	6	3	9			0
1959	6	3	9	1	1	2
1960	1	2	3			0
1961	1	5	6			0
1962	2	3	5			0
1963		2	2			0
1964	2	2	4			0
1966		1	1			0
1967	2	1	3			0
1968		1	1			0
1969	2	1	3			0
1970	2	1	3			0
1971		3	3			0
1972	1		1			0
1973			0	1		1
1975	2	1	3			0

(continued)

Table 4.2 (continued)

Research year	Available			Unavailable		
	Original	Cited	Total	Original	Cited	Total
1977	1		1			0
1982	1		1	47		47
1987	1		1	47		47
Total	209	195	404	97	57	154

Note "Available" means those that can be used to calculate the values in Fig. 5

the degree of fitting of model 1 is much better than that of the model 2. The mean age at menarche calculated from our sample is very close to the real one expected from the Frisch hypothesis.

Table 4.5 shows the result of regression of mean age at menarche by the categories seen in Fig. 4.3.[4] Case 1 in Table 4.4 of all samples from the 1920s to the 1930s shows a negative correlation with a significance level of 1%. The case of mill workers from the 1920s to the 1950s has the same level of statistical significance while the case of students from the 1920s to the 1930s shows the same trend with slightly lower significance, but the case of students in the 1940s sample shows the opposite trend with a higher significance level.[5] The difference in results between workers and students probably comes from the gap in ordinary diet: workers ate much more at the company dormitory than students did at home.

4.3.3 Short-term Analysis of Mean Age at Menarche and Height Velocity

We can use the intersection of menarche data and height data to understand why a decline set in from the early 1920s.[6] Figure 4.6 shows the change of mean height of female from age 7–15 during the period up to 1930. Mean heights were clearly increasing in all age categories. The upward tendencies of girls age 12–15 are especially remarkable. This feature without doubt arose from the improvement in living standards of students at this time. Schoolteachers probably recognized that 12-year-old girls at the annual graduation ceremony were becoming taller year by year. This

[4]Regressions based on time tend to yield larger t-values because more values on the Y-axis overlap on the same value of the X-axis.

[5]Most of menarche data used in the paper cannot be classified by birth cohort because they contain information only on the year the research was conducted. This means that the data on students are more reliable in terms of the precision of age at menarche age than the data in other categories, because student age is much closer to the age at menarche.

[6]The reason we chose height here is that, for physiological reasons, menarche frequently happens within a few years after the age of Peak Height Velocity.

Table 4.3 Basic statistics for average age at menarche

Age/Year	1870–1899	1900s	1910s	1920s	1930s	1940s	1950s	1960s	1970s	1980s
Mean	14.65	14.96	14.76	14.70	14.54	14.62	14.48	13.40	12.82	12.52
S.D.	0.18	0.45	0.43	0.57	0.43	0.62	0.77	0.76	0.17	0.11
Max.	14.75	16.50	16.08	16.37	15.68	16.14	17.25	15.56	13.06	12.76
Min.	14.17	14.35	14.17	13.75	14.00	13.31	12.67	11.57	12.50	12.22
n	9	26	19	115	53	61	135	28	12	96

Note One selection of data from 1948 was excluded because it included no information on average age

Table 4.4 Estimation of age at menarche in 1921: Taishō rural village

Age (*sai*)	Height average (cm)	Weight (kg)										
		Real average	Model 1					Model 2				
			10th	25th	50th	75th	90th	10th	25th	50th	75th	90th
11–12	128.78	27.37	27.5	30.0	32.0	34.0	38.5	n.e	n.e	n.e	n.e	n.e
12–13	134.23	31.26	***30.0***	***32.4***	34.6	37.5	41.6	n.e	(36.0	39.0	42.3	45.3)
13–14	139.08	35.35	32.1	***34.5***	***37.1***	40.1	44.3	36.0	38.3	41.3	44.8	48.0
14–15	142.71	39.60	33.5	36.1	***38.5***	***41.7***	46.0	***37.5***	***40.1***	43.1	46.5	50.3
15–16	144.53	43.19	34.5	37.2	39.5	***43.2***	47.6	38.8	***41.2***	***44.5***	48.2	51.3
16–17	145.74	45.61	34.9	37.6	40.5	***43.6***	***48.3***	39.3	41.9	***45.2***	***48.9***	52.3
17–18	145.74	47.33	34.9	37.6	40.5	***43.6***	***48.3***	39.3	41.9	***45.2***	***48.9***	52.3
18–19	146.35	48.31	35.2	38.0	40.5	***44.0***	***48.5***	39.6	42.2	***45.5***	***49.1***	52.5
19–20	146.35	48.56	35.2	38.0	40.5	***44.0***	***48.5***	39.6	42.2	***45.5***	***49.1***	52.5
20–21	146.05	48.73	35.0	37.8	40.4	43.8	***48.4***	39.4	42.0	***45.3***	***49.0***	52.5
21–22	146.35	48.78	35.2	38.0	40.5	44.0	***48.5***	39.6	42.2	***45.5***	***49.1***	52.5

Source Age · Height (average)·Weight (average): Naimu-sho 1929/90, Table 16. 1. *kan* = 3.75 kg, 1 *shaku* = 30.3 cm
Model 1 and Model 2: Frisch, R.E. 1978, Figs. 3 and 4
Notes
(1) Figures in parenthesis at age 12–13 in Model 2 are estimated weights corresponding to 135 cm in height
(2) Figures in bold and quasi-field are percentiles corresponding to real average weights
(3) Model 1 signifies minimum weights by which menstruation starts where fat proportion is about 17%. Model 2 signifies minimum weights by which menstruation starts where fat proportion is about 22%

Table 4.5 Simple regression of mean age at menarche: 1880s–1980s

	Period	β	n
(1) All	1920s–1930s	−0.235***	167
(2) Student	1920s–1930s	−0.302*	30
(3) Mill worker	1920s–1950s	−0.385***	40
(4) Student	1940s	0.797***	14
(5) All	1880s–1980s	−0.752***	564

Notes
(1) Explanatory variable is time (t)
(2) ***: Significance level 1%; *: significance level 10%

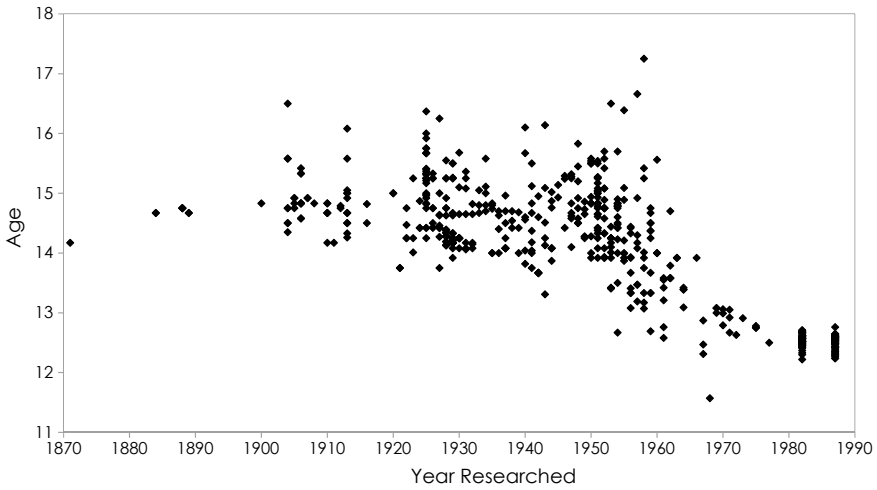


Fig. 4.2 Secular trends and fluctuation of mean age at menarche in Japan, 1870s–1980s

general improvement in girls' anthropometric growth as seen in their height unquestionably led to a decline in the age at menarche beginning in the early 1920s.

Next, looking closely at the upward tendency of heights, we considered three stages in the period of changing trends: 1903–1910, 1911–1920, and 1921–1930. For each period, we calculated the velocities of heights. The analysis of velocity of female height growth enables us to understand when the decline of the mean age at menarche started. We define the velocity of height growth as following, in a formula that shows the index of the difference of mean heights at each age.

$$X_{n+t} = X_n(1 + r)^t$$

Table 4.6 summarizes the results of calculations of growth velocity. First, regarding the gender gap of velocity, before 1920 female velocity was surprisingly much better than male velocity, with fewer negative signs on the female side. Thereafter,

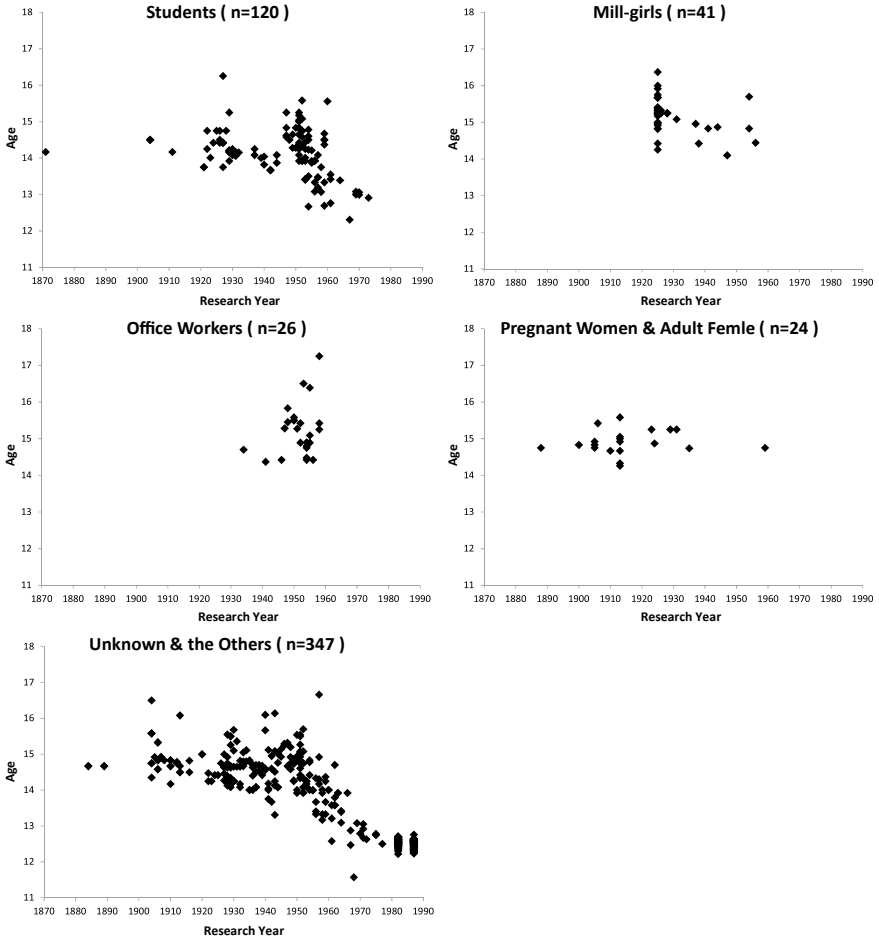


Fig. 4.3 Trends and fluctuations of mean age at menarche in Japan, 1870s–1980s, by category of sample

until the 1930s, the values of boys' height velocity rose a little more as a whole than those of girls, with signs becoming positive in all cases. In the 1940s, when Japan was at war, negative values of growth velocity appeared again in the case of both boys and girls like those of the 1900s. The growth velocity of height clearly was faster during the 1920s not only on the boys' side but also on the girls'. The steady improvement in the body growth of girls, as seen from the remarkable height growth of the 1920s, signifies that the decline of menarche age started from this period. As far as the height and menarche data presented here indicate, socio-economic conditions during the interwar period were not necessarily deteriorating. Rather the data here is synchronized with the rise in real wages of carpenters observed in the same period (Saito et al. 2004).

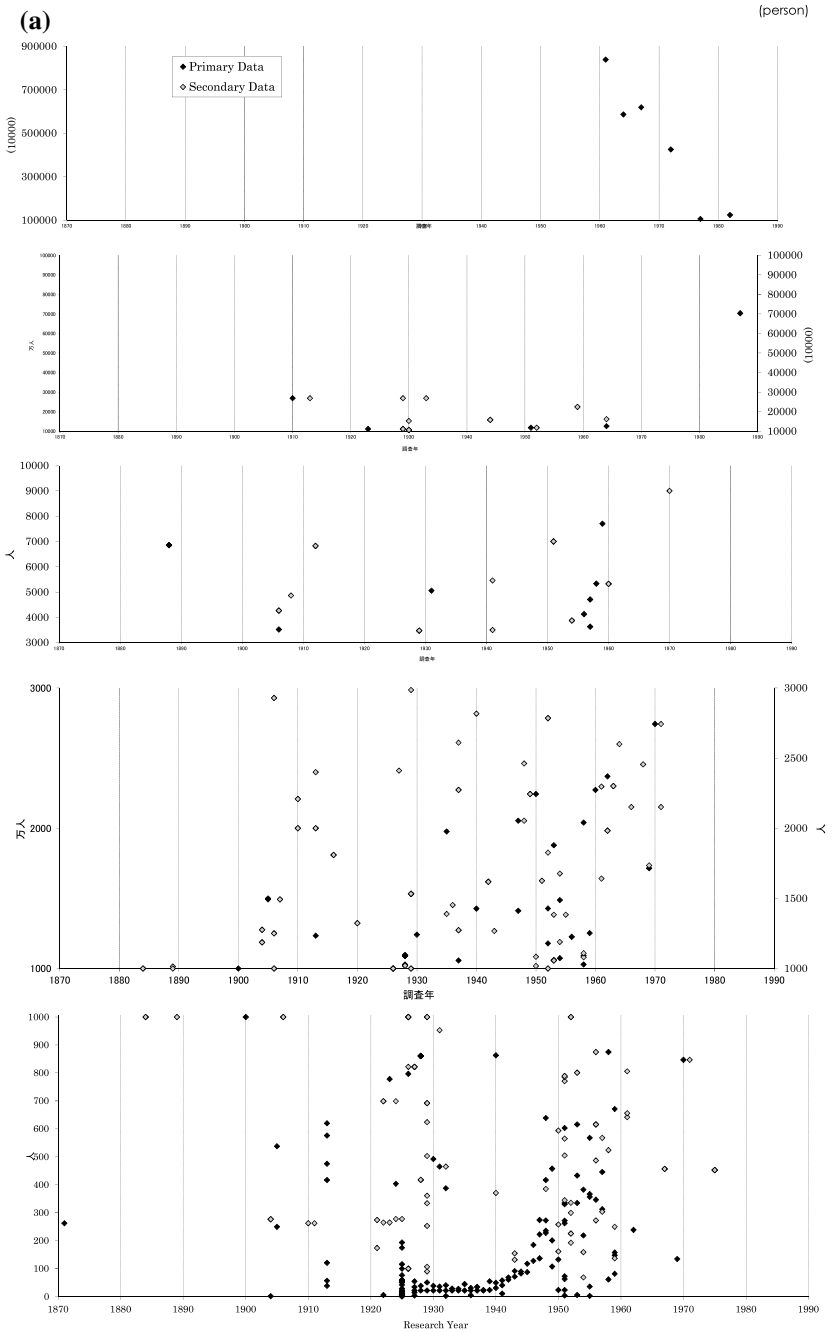


Fig. 4.4 **a** Sample size of group researched by year in Japan, 1870s–1980s, **b** Sample size of group researched by prefecture in Japan, 1870s–1980s

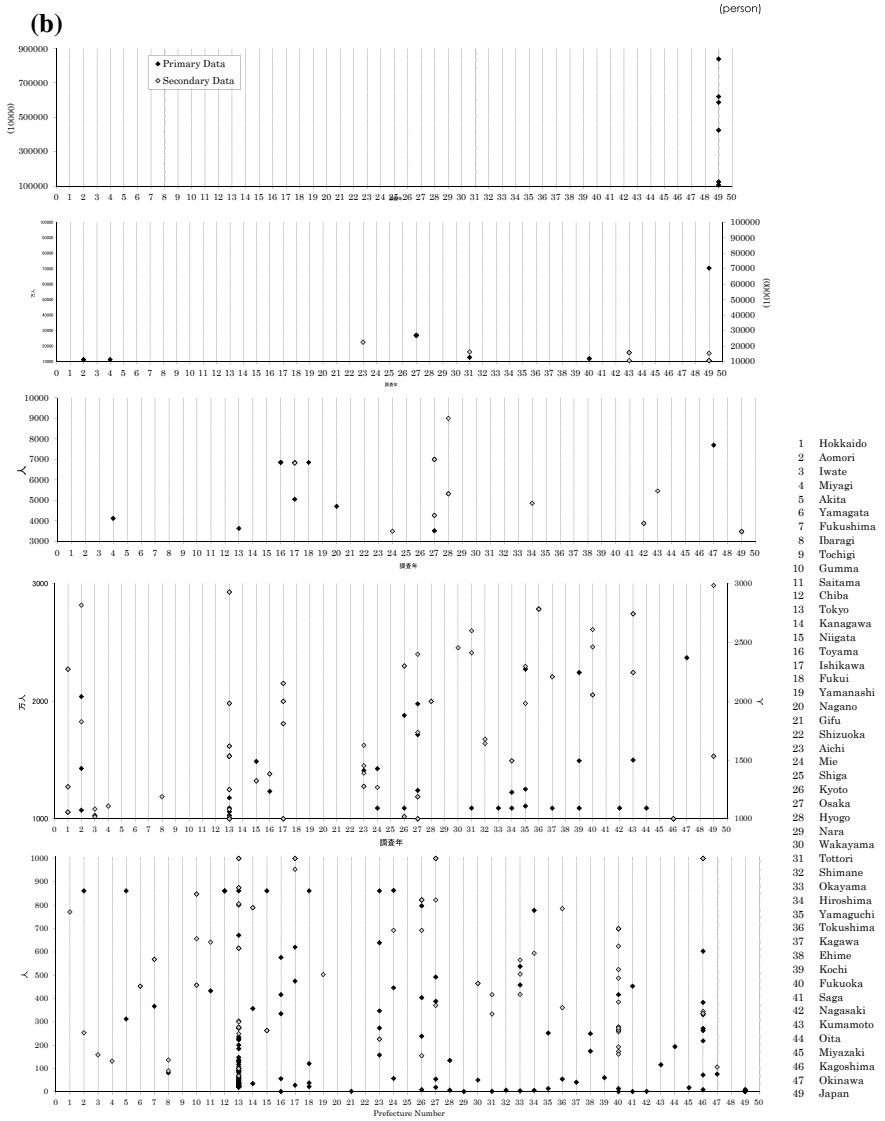
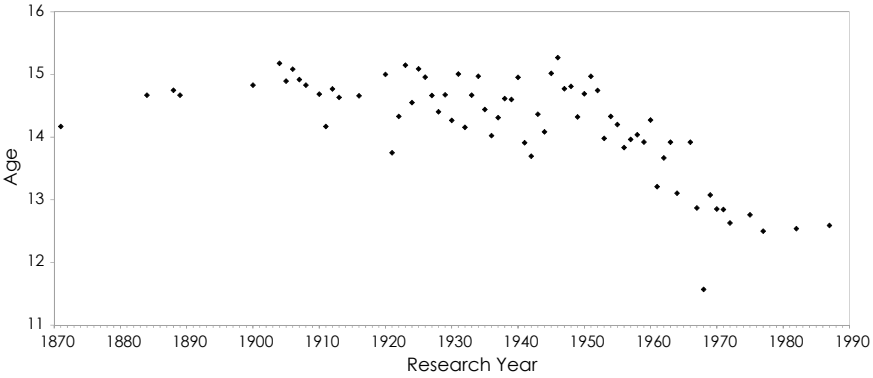


Fig. 4.4 (continued)



Note 1) The values in the figure are weighted mean of each year calculated from the selected samples.
Note 2) See the following table of sample size at each year.

Research Year	1884	1888	1889	1900	1904	1905	1906	1907	1908	1910	1911	1912	1913	1916	1920	1921
Sample Size	2,000	27,416	2,015	1,000	5,759	3,781	22,409	2,986	4,861	35,562	263	13,652	36,822	3,620	2,646	448
Research Year	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
Sample Size	1,669	12,178	1,381	1,377	4,919	5,830	20,680	80,549	59,455	6,532	919	26,934	50	3,433	1,511	10,816
Research Year	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953
Sample Size	46	79	5,559	9,067	4,984	1,719	31,716	206	313	4,100	6,694	5,255	5,517	40,964	27,889	9,429
Research Year	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1966	1967	1968	1969	1970
Sample Size	14,008	2,714	8,565	9,971	13,142	32,848	12,917	845,091	8,558	4,600	617,866	2,151	620,688	2,455	3,585	12,590
Research Year	1971	1972	1975	1977	1982	1987										
Sample Size	5,741	425,408	1,359	105,567	123,908	70,350										

Fig. 4.5 Trends and fluctuations of weighted mean age at menarche in Japan, 1870s–1980s

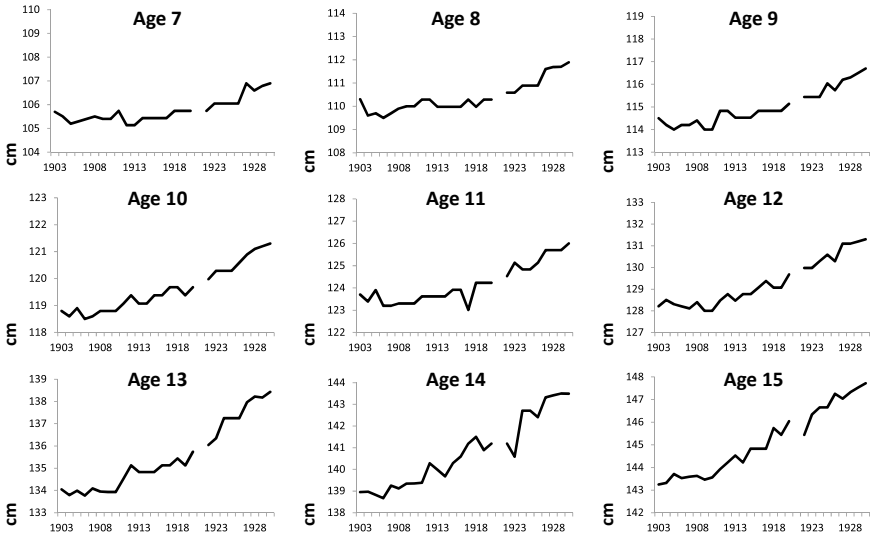


Fig. 4.6 Changes in female height from age 7–15 in Japan, 1903–1930. *Note* The graphs do not include date from 1921. *Source* Annual Report by Ministry of Education in Japan, 1903–1930

Table 4.6 Annual growth rates of female and male height from age 6–16 in modern Japan, 1900s–1930s ($\times 10^{-4}$)

Age (*Sai*)	Male				Female			
	1900–1909	1910–1919	1920–1929	1930–1939	1900–1909	1910–1919	1920–1929	1930–1939
6	−3	0	11	10	7	0	10	12
8	−3	6	14	12	0	3	12	9
10	5	6	13	10	−5	5	14	15
12	−2	10	17	6	7	13	17	3
14	−2	11	18	11	5	9	8	8
15	7	−11	20	13	14	11	10	8
16	6	4	10	10	9	8	13	11

Sources Monbu-Kagaku-Shō [Ministry of Education, Culture, Sports, Science and Technology] ed. *Tairyoku Undō-nōryoku Chōsa-Hōkoku-Sho* (Report on research on physicality and exercise capacity); *Gakkō Hoken Eisei Tōkei Chōsa Hōkoku-sho* (Report on school investigations on health)

4.4 Concluding Remarks

First, this paper collected data of mean age at menarche from many kinds of medical and sociological journal articles published from the 1870s to the 1980s by using an original database system, and carefully classified the data to analyze the trends and fluctuations of mean age at menarche in Japan.[7] Second, in order to confirm the results of this analysis of mean age at menarche, this paper evaluated the growth spurt of height during adolescence, especially from the 1900s to the 1930s, based on the height data compiled by Japan's Ministry of Education. We present the following concluding remarks:

(1) The long-term fluctuations of mean age at menarche in modern Japan show that until the 1940s the mean age was much more stable at around the latter half of aged 14. After that time, it declined to the middle of age 13 in the 1960s and then fell drastically to the latter half of age 12 by 1980. The background of these changes was Japan's experience of WWII, the chaotic period of war of post-war recovery, and then of the age of high economic growth from the 1960s. It is undoubtedly the case that the hardship of wartime caused the age at menarche to rise due to the psychological stress on adolescent girls. Returning to a calmer social state, especially after 1970, the range of fluctuation of the mean age at menarche seems so small that we call it a period stability at a lower age.

(2) Our data statistically confirmed that the tendency in the mean age at menarche in the case of students and mill girls was a clear decline from 1920. The Frisch hypothesis that marginal skinfold thickness affects the start of puberty and in Japan's case in this period, schoolchildren growing up in their households had more accumulated skinfold fat thickness due to their rising nutritional status, causing puberty to start earlier. At the same time, not only psychological stress but also declining nutritional status delayed the onset of puberty during the war. The conventional wisdom regarding Japan's family household system says that schoolchildren were placed in a weaker position in their households for the redistribution of nutritional intake. Many Japanese historians have hitherto stressed the weaker positions of those who sometimes played leading role in anecdotal accounts of severe economic recession during the interwar period. Certain factory workers, urban female servants (*jochū*), and migrant workers were surely among the leading players in the second stage of Japan's industrialisation from the 1900s to the 1930s. At the same time because most of them came from rural peasant households, we may conclude that the general standard of living in rural Japan was not as bad as has been thought. Rather, at least by the early twentieth century, peasants' living standards had already improved.

(3) In the results of the height velocity analysis, both boys and girls at certain ages show negative velocity until the 1900s, but then, by the 1930s, the velocity has

[7] This careful treatment of data does not necessarily eliminate certain problems in menarche data that result from people's inability to recollect accurately their age at menarche.

turned positive in all cases. It is especially noteworthy that both boys and girls generally experienced their prewar maximum height velocity during the 1920s.

(4) Both the contours and the velocity of female height growth by age also have slopes that after age 12 seem remarkably steep compared with those before age 12 (Fig. 4.6). This suggests that the spurt had already begun to accelerate during the 1910s and 1920s. That is, it is very reasonable to think that the energy for initiating the spurt was already stored from an earlier period.

The changes in living standards of schoolchildren indicated by these analyses of age at menarche and height velocity have greater importance for socio-economic history when considered as part of the long-term process of demographic improvement in Japan since the middle of the nineteenth-century. The historical demography of Japan shows a substantial and drastic change in Japan's fertility between the nineteenth and early twentieth centuries. Table 4.7 is especially impressive in showing the great transformation of regional fertility patterns in Japan: in the lower-fertility east, the M index of late Tokugawa Japan rose rapidly to exceed Western values at least by 1925. As for the annual increasing rate of population growth, we see the same phenomena more drastically indicating a shift such that eastern Japan outstripped western Japan in regional population growth.

Throughout the entire Tokugawa period, the northeastern part of Japan called Tohoku typified a recessionary Tokugawa economy. Impoverished Tōhoku peasants intentionally and frequently performed *mabiki*, or infanticide, and *datai,* or stillbirths (Tomobe 2001). Probably, when even they faced the introduction of rural industry during the early nineteenth century, what had in the past been a severe condition of hunger drastically changed. Fertility rose as eastern Japan's peasants, including

Table 4.7 Natural fertility (M) and annual growth rates of population in Japan: eighteenth century to 1950

	Japan All	Eastern Japan	Western Japan
Natural fertility: M[a]			
18–19c[b]	0.6759	0.5392	<0.7406
1925[c]	0.7969	0.8273	>0.7655
1930	0.7242		
1940	0.7406		
1950	0.92		
Annual rate of population growth %[d]			
1721–1846	0.02	−0.02	0.06
1846–1881	0.57	0.67	0.47

[a]Tomobe (1991, 2001) explains the concept and calculation process related to the Hutterite Indices

[b]Table 2 of Tomobe (1991), p. 40. Eastern Japan's value is derived from those of the Kantō and Tōhoku regions, and Western Japan's value is derived from the Kinki and Chūgoku regions

[c]Post-1925 data are calculated from Kobayashi, K. & Tsubouchi, Y. (1979) based on the formulation of natural fertility analysis

[d]Table 1.1 in Saito (1988)

those in Tōhoku, steadily accumulated wealth by working more intensively in both agriculture and proto-industry and changed their nutritional status and living standards. Here the new demographic-economic regime started to reach the modern state of a stable trend in age at menarche, as shown in this paper. Indeed, the data suggest a reassessment of the economic and social recession of Japan's interwar period, and a reconsideration of whether the description of the age as deeply recessionary makes sense in light of such anthropometric evidence as height and age at menarche. Just recently, detailed research on schoolchildren's heights in a rural part of southern Nagano prefecture in the 1920s and 1930s shed new light on the important role of rural Industrialisation in the improvement of child health and anthropometrics (Tomobe 2017). Synchronized with the fluctuations of age at menarche and height, one of the indices of living standards, namely infant mortality, in this case in Osaka city workers' households, is seen to have declined drastically from the latter half of 1920s on. Living standards rose due to workers' practices as well as support by city government, private companies and volunteer social capital (Higami and Tomobe 2012, 2014). Moreover, the bargaining power of tenant farmers against landowners was increasing significantly during the same period. As a result, landowners were giving up their landownership in the landlord-tenant relationship of pre-war Japan (Tomobe 2007, Ch. 6). Not only economic evidence but also anthropometric indices such as height and age at menarche without question shed light on the new insights necessary to a reconsideration of the condition of Japan's living standards during the interwar period.

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Part II
Book Reviews

Chapter 5
Review of Satomi Kurosu (ed.), *Rekishi Jinkōgaku kara mita Kekkon, Rikon, Saikon* (Marriage, Divorce and Re-marriage from the Perspective of Historical Demography)

Reitaku Daigaku Shuppankai, 2012

Motoyasu Takahashi

This is an exceedingly restrained and for that very reason a highly enlightening work based on a life course perspective. It consists mainly of quantitative analyses of marriage patterns over a period of roughly two hundred years, from the early modern into the modern era, or the second half of Edo until the pre-World War II period. It is based on historical micro data found in Edo-era religious registers (census-type religious affiliation registration records, *shūmon aratamechō*) and local population registers (*ninbetsu aratamechō*) and on macro demographic statistics and prefectural statistics from the Meiji and Taishō eras. The result is a major achievement in the contemporary study of historical demography.

This study uses mostly quantitative data from religious registers to elucidate the life course and marriage market for commoner marriages in the Edo period (pre-1868). The religious registers were kept from 1638 forward in areas under the direct control of the Tokugawa shogunate and later expanded nationwide to support the Tokugawa ban on Christianity. Local population registers were kept by *daimyō*, or domain lords, for the purpose of securing people for labour and combat-support roles. The authors also make extensive use of the array of materials on Japan's historical demography that Akira Hayami gave to the university where he worked, Reitaku University, as a "legacy to humankind." It was Hayami who pioneered the use of religious registers to carry out in Japan the methodology of family reconstitution that he had encountered in France and England in the 1960s.

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N. Okuda and T. Takai (eds.), *Gender and Family in Japan*, Monograph Series of the Socio-Economic History Society, Japan,
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The materials used to research historical demography in Japan and those used in Europe can be simply compared. Parish registers, which constitute the principal materials used in Europe and Britain for quantitative analysis in historical demography, are records of the three major life events of individuals: birth, marriage, and death. Demographic phenomena are researched by using these records for what is called family reconstitution. By contrast, Japan's religious and population registers record data on households; they present family in the form of relationships with the family head. Whereas the nature of Europe's parish registers makes it hard to capture the movement of people across parish lines, Japan's registers often include annotations that enable such analysis. However, Japan's religious registers were compiled only once a year, meaning that new births and deaths were not recorded in all cases, so the registries cannot be regarded as accurate records of births and deaths.

The structure and content of this volume are as follows.

Chapters 1–5 present an analysis of marriage, divorce, and remarriage as they relate to region and to the family system, based on the micro-materials in the religious and population registers. The materials used are the population registers from three towns and villages in the Kōriyama area of Fukushima Prefecture (Chapters 1, 2, 5) and religious registers from four villages in Aizu (Chapter 3), along with religious registers from one village in Ōgaki, Gifu Prefecture (Chapters 1, 4) and from one village at the tip of Nagasaki Peninsula (Chapter 1). Four particular features of 18th-19th century commoner marriage become evident. First, there are regional differences in the timing of the first marriage; second, marriage is the prevailing state and the marriage market is fluid; third, dissolution of marriages due to death or separation and divorce, as well as early remarriage after divorce, occur frequently; and fourth, the age of marriage becomes higher in the course of the 18th and 19th centuries. The significance of this volume is that it is able to "capture the actual conditions and changes of marriage from a long-term perspective" (p. 11) through the use of micro-data.

Let us examine each chapter in detail.

Chapter 1 (Satomi Kurosu, Noriko Tsuya, and Kiyoshi Hamano) takes a formal demographic approach to micro-data from Nomo Village in Hizen Province (today's Nomo Peninsula, Nagasaki Prefecture). The authors examine the marriage patterns in what was a "marriage-oriented society" or society in which the majority of the population married, using an array of statistics, especially regarding the timing and results of women's first marriages. They also compare these data with data from the population and religious registers of four villages in northeastern, central, and southwestern Japan (Tōhoku, Chūbu, and Seinan regions). Beginning with a definition of early marriage, they explain the life course of women after their first marriages, by comparing the incidence of intra- and inter-village marriages, as well as differences in marriage age between husbands and wives, marriage duration, reasons for marriage dissolution, and the probabilities of remarriage.

Chapters 2 through 4 undertake comparisons with the famous research on marriage and family systems by Swedish socio-economic historian J. Hajnal. Northwestern European family composition was distinctive first for the degree to which young men and women married late, established independent households immediately upon

marriage, or remained unmarried, a phenomenon explained by the fact that they lived temporarily in their employers' homes as servants and changed jobs frequently.

Chapter 2 (Kurosu) analyses the life course of women in first marriages and their aftermaths in two agricultural villages, by birth cohort and by marriage type (son/groom adopted into the bride's family, or bride married into the groom's family). The result shows that because marriages in which grooms were adopted into the bride's family had a high probability of divorce and because remarriage occurred early and frequently, divorce and remarriage had the effect of solidifying the stem family.

Chapter 3 (Aoi Okada) uses religious registers from the mountain areas of Aizu in Fukushima Prefecture to analyse the life course from the point of view of the link between marriage and household relationships and hierarchies. Okada argues that although there was a male bias in terms of sex ratios, the higher the social class, the more marriage played the role of maintaining the family's status.

Chapter 4 (Osamu Saito) examines Nishijō village in Gifu Prefecture in central Japan, focusing on marriages ending in divorce or death and their relationship to family succession. He finds that the choice of remarriage for widows depended on the eldest child's reaching the age of succession, and concludes that remarriage was a family succession strategy based on the stem-family model.

Chapter 5 (Miyuki Takahashi) discusses marriage and remarriage in the former Nihonmatsu domain in Kōriyama, Fukushima Prefecture. Until the first half of the 19th century, the population in rural parts of Nihomatsu showed a trend toward decreasing whereas the population of Kōriyama, a town with a vibrant economy, continued to increase. The age of first marriages was also high in Kōriyama, but divorce and remarriage after the first marriage were as frequent in the town as they were in rural areas in the same region, and marriage overall was highly fluid. The author also assumes that mobility and social networks contributed to the formation of a marriage market that covered a wide region.

Chapter 6 (Hiroshi Kawaguchi) also uses historical micro data. It applies an historical geography analysis to the religious registers of 16 villages in the Kyoto-Osaka-Kōbe region and investigates marriage-related migration and its structure in marriages including those in the towns and cities of the Kinki district. Kawaguchi finds that marriage-related movement was not as restricted as was generally believed in the past, but rather was highly fluid. A spatial structure with a city-centred hierarchy is apparent in the Kinki region, consisting of areas into which people from distant places marry and areas that send people out to be married. The approach taken is that of historical geography, and the behaviour of individuals is therefore generalised.

Chapters 7 and 8 are based principally on the macro historical data found in the demographic statistics of the Meiji and Taishō eras (1868–1920s). Chapter 7 (Harald Fuess) examines the regional differences, principally in divorce, found in the micro data of the latter half of the Edo period, and is interesting also for its introduction of the perspective of Europeans and Americans who visited Japan in the late 19th century. Using Meiji-era statistics, this chapter demonstrates that extramarital cohabitation and divorce rates were high across classes and across regions, and that the concept of marriage itself was extremely fluid until the early 20th century.

Chapter 8 (Osamu Saito) places Japan in a Western European/non-Western European framework and constructs a theoretical framework for considering marriage and remarriage. It should be noted that despite the fact that the divorce rate began to fall sharply after the establishment of the Meiji Civil Code in 1898, marriage itself remained the norm. This, too, is a feature of Japanese stem families. Saito stresses that, based on the premise of establishing comparisons with the work of the abovementioned Hajnal, it continues to be important to understand the rules governing the formation of family households, whether in the west or in the east, in order to understand the demographic phenomena of marriage and remarriage in a given district and the process of historical change.

The parish registers that constitute the main sources for the study of historical demography in Europe, including the United Kingdom, are records of the three major life events: baptism (birth), marriage, and burial (death). But each one of the events was part of a larger story or drama.

The editor of this volume acknowledges that the concrete cases of marriage, divorce and remarriage are as interesting as novels. The case of the widow of Yasuemon of Saijō-mura during the poor harvests of the Tempō period (Chapter 4), of the frequent marriages of the Kōriyama travel brokers Kumajirō and Manbe'e (In Chapter 5), and of the woman from Shibata village in Harima Province who married Buhe'e of Harimaya in Osaka's Tenman Tsuboya district (Chapter 6, p. 162 Tables 6–7) introduce numerous life courses centred on "marriage." After losing her husband, who had been a peasant farmer on a tiny scale, Yasuemon's widow remained with her three-year-old son in the home of her mother-in-law and carried on the "family—ie" by bringing a husband from a neighbouring village into the family as an adopted heir. In the final year of the records, the family was composed of three generations: Yasuemon's widow and her second husband, the son and his wife, and their grandchildren. Meanwhile, another widow, whose son was somewhat older, maintained her "ie" or family without remarrying. The Kōriyama case includes men who cycle repeatedly through marriage, separation or widowhood, and remarriage at an astonishing rate, as well as the example of a woman who, after the failure of one marriage, remain in the household of which her older brother has become the head. Far different is the case of the travel broker Kumajirō who married four times: in his case, the business itself exerted a great influence on his choices.

This book, however, is essentially devoted to the analysis of quantitative data, and the people and their specific family histories have been left for further study. This is what I meant in my initial description of this work as both restrained and enlightening.

By adding to the fruits of quantitative research on the history of marriage, divorce, and remarriage, research that reveals the "stories" beyond the numbers—what people of past times thought about and the decisions they took with regard to these life events—will further enrich our understanding of the family of the early modern and modern eras. It is therefore important, too, to explain how the historical demography of Japan compares or contrasts with the cases of England and France.

Chapter 6
Review of Chikako Katō, *Kindai Nihon no Kokumin Tōgō to Jendā* (National Integration and Gender in Modern Japan)

Nihon Keizai Hyōronsha, Tokyo, 2014

Kazue Enoki

"This book examines the social norms and ideologies that had a strong hold on people in the age of the modern nation-state, with a particular focus on gender issues" (p. 1). The questions the study raises are the following: "How were people involved in the construction of gender norms and ideology within the context of the nation-state's seeking both the integration of the "people" and differentiation among them; and how did [these norms and ideologies] become inescapable in the historical context formed thereby?" (p. 3).

No one is likely to reject the idea that the critical history of the nation-state [*kokumin kokka-ron*] has been one of the currents in the study of Japan's modern history. Moreover, as indicated by the establishment of the Gender History Association of Japan in 2004, gender history has stimulated new debate in Japan from a multidisciplinary perspective. The author started out in the 1980s doing research on the history of farmers' movements. This volume is a compilation of her research findings as she engaged forthrightly with the new directions of research that caused great ferment in post-WWII historical studies. Whereas the discourse on the nation-state tends to be directed at the period of the nation-state's formation or on the wartime regime, this study focuses on the interwar period, especially Taishō [1912–26] and more concretely highlights the process by which ideology acted on people. The following is a simple introduction of the book's contents.

This is a translation of a book review that originally appeared in *Shakai Keizai Shigaku* 81(4) (February 2016), pp. 133–135.

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The introductory chapter, titled "Locating the Subject in the 'Nation-State' and Gender", lays out the perspective of this volume as follows: "The stages of nation-state formation and national integration form the main axes of this discussion, with attention also to the formation of gender norms and ideology corresponding to those [same] stages" (p. 19). The chapter lays out the research of the early 1990s to the 2000s in clear historical terms.

Part I, "Gender and the Establishment of the Nation-State", questions the basic model of gender that was formed alongside nationality as the nation-state system began to take hold. Chapter 1, "The Image of Women in the Japanese 'Empire,'" explores how "good-wife-wise-mother" ideology was reshaped following the First World War. The author argues that Japan, having recently come into possession of colonies as a result of the Sino-Japanese and Russo-Japanese Wars and seeking urgently to establish an "imperial" structure that could confront Europe and the US, devised an image of the model woman as "good-wife-and- wise-mother." She also demonstrates that the image became increasingly defined as "mother" with the spread of eugenics theory, the mission of which was to improve the race, an entity that was itself indivisible from the logic of the nation-state.

Chapter 2, "The Science of Gender and the Ideology of Good-Wife-Wise-Mother", examines the logic of the "scientific discourse" around gender that emerged in Japan in the late 19th-early 20th centuries and that today continues to have all the appearance of "conventional wisdom." The author confirms that the government's reluctance regarding higher education for women and the educational policy preference for "good-wife-wise-mother" ideology did not derive from traditional views of women. Rather they were generated at the beginning of the 20th century and were justified by invoking the natural science that was then current in Europe. In addition, the author reminds us that Raichō Hiratsuka, widely regarded as a leading example of the "new woman," herself later gave credence to science (eugenics) and called for the rights of the "mother" from the standpoint of respect for the maternal nature; the author explains how the discourse essentialising gender differences within a scientific context was disseminated. Chapter 3, "The Construction of 'Youth' as a Subject", examines the activities of the "Dōshikai" of students and alumni of Kawagoe Junior High School in Saitama Prefecture in order to ascertain how regions responded to the national-level aspirations for "youth." The author focuses on one particular aspect "that the notion of "youth" subjectivity became the axis around which the responses coalesced" (p. 101), and she examines the process of constructing an identity of "youth". This reader found the author's "gender history" perspective most clearly reflected in this chapter.

Part II, "Reorganisation of the Nation-State and Gender", discusses the shifts in national integration and gender as they entered a new stage triggered by the First World War. Chapter 4, "National Integration and Family Ideology", discusses "family as an ideological device of the nation-state". The author keeps in her purview both the "*katei* [household]" as the place of the modern family and the "ie" as an "invented tradition" of family. Based on the statements of the bureaucrat of the Ministry of Home Affairs, Ichimin Tago, she points out that the ideology of the ie was reawakened in the 1920s. This happened even as new ideas were emerging about the ie that were

premised on smaller families, which were then in fact becoming more common in urban areas.

Chapter 5, "The Reshaping of Views of the 'Female Factory Worker,'" addresses the attitudes towards the female factory worker, who was regarded as deviating from the good-wife-wise-mother paradigm. The author's aim is to clarify how the social contempt for these women came into being and the logic behind it. In order to do this, she takes a fresh look at *Shokkō Jijō* [On the Situation of Workers] (Commerce and Industry Bureau, 1903, Tokyo, Ministry of Agriculture and Industry) and *Nihon no Kasō Shakai*, [Japan's lower classes] (Gennosuke Yokoyama, *Nihon no Kasō Shakai*, Tokyo, Iwanami Shoten, 1899).

Additionally, she points out that after World War I, there was once again a strong presumption calling on women factory workers to play the GWWM and the maternal role, and that later in the 1920s, women's own labour-union movements began speaking of their members as "labouring women" and exalting a morality that, in its idealisation of love, marriage, and childbirth was not discordant with national policy. In this chapter, "Labour Policy and Gender", focuses on the statements of policy makers, social policy scholars and women activists in order to examine from a gender perspective the norms and ideologies supporting labour policy. Specifically, she takes up the principle of "comparable worth" and the concept of "family wages", and suggests that the revised factory law of 1926 became one of the causes of the later instability in the status of female workers. The final chapter, "The Stages of National Integration and Gender", addresses the "characteristics of the relationship between modern Japan's gender norms and the advancing formation of the nation-state and national integration" (p. 201), dividing the process into two stages, the first from the late 19th to the early 20th century and the second from the WW I period into the 1920s.

The nation-state discourse of the time focused on creating a race- or ethnicity-based "nation", and though it acknowledged the existence of those on the periphery, it neglected them in its discourse analysis. This book vividly depicts how the people at the periphery, while coming a little late to promoting their own subjectivity, formed their own responses to the gender norms demanded by the state, and created new Others in the process. What is striking is that there was hardly any mention of the Emperor System. Subjectivity in this period proceeded without regard to the existence of the Emperor.

However, I could not understand the relationship between national integration and the question of the formation of subjectivity by the parties concerned with advancing their causes. For example, this book takes up the "women factory workers" who were located at the periphery, but when we recall that the overwhelming majority of "women" did not participate in the labour movement but simply worked hard, I find it hard to understand the significance of the discourse on "labouring women" mentioned above. Of course, since the author's main focus is on "depicting people as the subjects of historical change" (p. 14), it is natural to focus on the causes' efforts to establish their own subjectivity, but can we say that the women building the union movement were rising up in their capacity as members of the nation-state? Additionally, I must confess that I developed some doubts as to whether the analysis

in this volume was too superficial. For example, Raichō Hiratsuka is singled out for discussion in Chapter 2, but previous research on Hiratsuka is not mentioned at all, which seems odd. Furthermore, the author in Chapter 3 argued that violence was linked with the term "youth" but her argument is based only on the use of certain idiomatic expressions, "strike a severe blow" (p. 106), "brandish a great iron hammer" (p. 107), "punish by hitting with fists" (p. 108). Although I looked for further discussion demonstrating a premise of violence, this was all that appeared, leaving me in doubt. In any case, the book is so compact that there is nothing superfluous. It would be a shame if that very compactness should give rise to the kinds of doubts I've mentioned here.

Finally, I would like to write some comments on matters that attracted my own interest. Chapter 5 focuses on social policy and the discourse of trade unions, and it seems that those who were most active in countering the view that "women factory workers" were overlooked were the owners of the large textile companies. Japanese textile giants focused on unmarried young women during the interwar period and developed unique labour management measures using worker dormitories to educate women in preparation for marriage [*hanayome kyōiku*], as is discussed in detail in Janet Hunter's *Women and the Labour Market in Japan's Industrialising Economy: the Textile Industry before the Pacific War* (London: Routledge Curzon, 2003)and Kazue Enoki's *Kindai Seishigyō no Koyō to Keiei* [Employment and Management of the Silk Reeling Industry in Modern Japan] (Yoshikawa Kōbunkan, 2008). This may seem incidental to the arguments of this book, but perhaps the real reason for not mentioning such research is because the focus of this book is the history of a certain "idea", as contrasted with the purposes of socio-economic history, which tries to grasp the reality of economic activity.

This book explains at the outset that it takes a constructionist stance and a normative approach to discourse analysis and says that this normative approach does "not interpret subject and power as a duality in an oppositional relationship, but rather is a method of focusing [research] on the power that the people living in the modern era assumed for themselves" (p. 14). However, the analysis in this book did not seem to differ at all from the methods used in orthodox historical research. Its treatment of norms and models also emphasizes the concrete ways in which they act on people, making it a historical narrative that is closer to reality. However, ideas and reality are in fact different, and it seemed that this point could have been explained more explicitly. In particular, there is an extremely interesting argument in this Chapter 6 to the effect that the labour policy that accompanied the revised Factory Law, though promoting the protection of female workers, in fact resulted in the termination of employment, decreased wages, and other issues for female workers, and that this was linked to an instability in the status of female workers that continues to this day. The reason this is striking is that in general, these phenomena have been regarded as natural corollaries to changes in the industrial structure, with the decline of the textile industry meaning a decrease in female workers and the rise of heavy industry resulting in an increase in male workers. Further consideration is needed of the suggestion made here, from the perspective of gender history, that certain policies and ideas actively promoted this change in labour composition.

By drawing out a different set of historical facts than those predominant in mainstream historical research, gender history in Japan is showing great vigour. Within that context, the argument developed in this volume, maintaining as it does an appropriate distance from mainstream historical studies, is especially valuable. This period is usually discussed within the framework of "Taishō democracy," but how does this book, with its focus on the formation of the "nation-state" describe this same period? I would hope that those who are not familiar with the term "gender" will read this work.

Chapter 7
Review of Hiroko Nagano and Yūko Matsumoto (ed.) *Jendāshi Sōsho 6: Keizai to Shōhi Shakai* (Gender History Series, Vol. 6: Consumer Society and the Economy)

Akashi Shoten, Tokyo, 2009

Manabu Ozeki

This part of the eight-volume *Gender History Series* deals with a broad theme, the relationship between consumer society and the economy. As Hiroko Nagano, one of the editors, explains:

> Gender studies are now a feature in most academic fields but in Japan, the field of socio-economic history has produced very little research that incorporates gender as an analytical concept. However, the studies in this volume have employed inter-disciplinary approaches that go beyond the methods of conventional economic history to examine the various aspects of human economic development from the viewpoint of gender (p. 5).

In pursuit of this aim, the book covers the following five topics: (1) reexamination of the concept of the patriarchal family system, (2) the gender history of labour, (3) examination of historical change from the viewpoint of gender, (4) consumption in gender history, and (5) gender and economic globalisation. In order to deal with these themes, the thirteen chapters of the book have been arranged in four sections. For reasons of space, the reviewer has regrettably been forced to leave out the subtitles of the various chapters, and has only been able to comment on two of the eleven shorter articles printed in column form. The rest of the review consists of an overview of each part and a brief description of each chapter.

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Section One, "Gender and the Family Economy", considers features of gender relevant to premodern family-based economies and demonstrates that the family systems of premodern society differed from those of modern capitalist society in that they were units of management possessing the functions of production and ownership. Section Two, "Gender in Relation to Modernisation and Industrialisation" analyses the processes by which gender underwent change and reconstruction during the establishment of modern nation states and the development of capitalist economies. Section Three, "Gender and the Consumer Society", examines the nature and special features of these changes in gender with reference to the "consumer society" and "consumer culture" that developed in the capitalist states of the U.S. and Japan from the second half of the nineteenth century onwards. Finally, Section Four, "Gender and the Globalising Economy", uses examples from Asia and Europe to investigate the nature of gender in the globalising economies of the present day.

7.1 "Gender and the Family Economy"

Chapter 1, "Gender as seen in Family Headships and Family Occupations in Medieval Japanese Society" by Michiko Gotō and Masako Sugawara, explores an important aspect of gender, namely power within the family system and the possession and monopolisation of wealth, with reference to succession to headships in samurai society and family occupation among the court nobility. The authors show that there were clear differences in gender as it related to succession and occupation, and that women were involved to a certain degree in the functioning of society during this period, even on a public level.

In Chapter 2, "Female Labour in Merchant Families in German Cities of the Late Medieval Period", Miyuki Sakurai analyses materials including the ledgers of fourteenth to fifteenth century merchants to demonstrate that even when it was a case of widows and merchant wives working in cooperation with the whole family, women involved in merchant activities in medieval cities had high levels of ability.

In Chapter 3, "Gender from the Viewpoint of Family Labour and the Family Management of Medieval Farming Villages", Junko Nagashima presents the features of family labour and farm management in the small farms of medieval Japan as a loose form of gender-based division of labour designed to make the fullest possible use of family labour centred on marriage partners. She then demonstrates that the medieval village, based as it was on the family system, was integrated into the patriarchal format of the feudal Japanese state, and that the family system was therefore positioned within this gender structure. The short articles in Section 1 are "The 'Women's House' in the City State of Lagash" by Fumi Karahashi, "Women's Role in the Brewing of Saké" by Akiko Yoshie, and "Foot-Binding and Labour" by Hiroko Sakamoto.

7.2 "Gender in Relation to Modernisation and Industrialisation"

In Chapter 1, "Gender and the Changes caused by the Meiji Restoration of 1868", Hiroko Nagano takes the period when Japan was industrialising during its transformation into a modern state, and shows how the resulting upheaval in their occupational setup affected both samurai and female servants, who had been respectively the visible and invisible components of the public, political space of the ruling class in pre-Restoration Tokyo (Edo). Chapter 2, "The Genderisation of Workers in Germany" by Toshiko Himeoka, is an analysis of the genderisation of workers that accompanied industrialisation in the Germany of the 1860s and 1870s. She shows that it was socialism and the labour movement that caused modern family norms to penetrate society, and that gender and class issues encouraged the genderisation of workers.

In Chapter 3, "Female Labour and Urbanisation", Kyōko Matsuura takes the case of London, where urbanisation began, and examines the period from the late nineteenth century to the beginning of the twentieth to show the links between the domestic piecework carried out by married women of the impoverished urban underclass and elements of the working environment such as repeated unemployment, and the high rate of casual employment in the form of day labour. She also suggests that the origins of urban domestic piecework lay with the stratified subcontracting system that developed as a result of the large pool of cheap labour that slum areas provided.

Chapter 4, "Female Workers in China" by Linda Grove, compares the work experiences of female workers in twentieth-century China over three generations, demonstrating the effect of the changes that occurred on both their work and their lives. Women of the first generation were reluctant to work outside the home, and only the daughters of poor families became factory workers. Women of the second generation, who worked in state-run factories, experienced far better working conditions and a dramatic reduction in the wage gap with male workers. Women of the third generation worked within the institutional framework that led China to become known as "the world's factory".

The short articles in column format in this section are "Sexuality and Female Factory Workers in Japan in the Period 1870 to 1945" by Chikako Katō, "Nursing 'Sisters' and the Modern State" by Aya Takahashi, and "The Formation of Families by Yearly Contract Laborers in Merchant Houses" by Yuki Sakurai.

7.3 Consumer Society

Chapter 1, "The Establishment of a Mass Consumer Society" by Yūko Matsumoto focuses on America in the first two decades of the twentieth century with reference to the issues that "consumption" poses for gender history. She revisits the representation of women as consumers during the formation of a mass consumer society, showing

that men also participated in consumption. She further points out that consumer culture was closely involved in the regrouping of the domain of gender and in the genderising of labour.

Chapter 2, "The 'Wartime Women's Magazine' and Cosmetics Advertising" by Ayū Ishida asks why women's magazines in wartime Japan were able to develop into a vehicle for government propaganda without losing their role as a media for advertising, even though these two facets seem to be contradictory. She finds her answer in the advertising strategy of the cosmetics industry. The short articles in this section are "'Modern Girls (*moga*) and 'Modern Boys (*mobo*) in 1920s Japan" by Kōhiyama Rui and "The Dual Nature of Urban Consumer Culture in Wartime Germany" by Kae Ishii.

7.4 "Gender and the Globalising Economy"

Chapter 1, "Gender and Policies of Economic Development" by Kyōko Kusakabe, examines gender relations and women's labour in Cambodia with a focus on the role of women in supporting the family and the community behind the façade of economic growth, reductions in poverty, and the creation of employment. This allows her to point to the fact that globalisation allows labour and material goods to become borderless but leaves social security, which cannot move over borders, in a vacuum.

Chapter 2, "The Formation of an International Market for Care Workers" by Wakō Asato, uses the case of Singapore to investigate the institutional and structural reasons for the continued expansion of the market for domestic labour during economic globalisation. He shows that at a time when the gendered division of labour is still entrenched, the growing demand for labour caused by high economic growth and the increase in the number of highly educated women have commodified domestic labour and also brought about its international specialisation.

In Chapter 3, "French Society and the Topology of Gender", Kiyoshi Satō has examined the occupational lives of French women, who are said to have achieved almost complete institutional and legal equality with men. He points to the existence of the "glass ceiling", in other words both to the continuation of a wage gap between men and women despite women's high level of employment and educational achievement and to the difficulty that they experience in gaining entry to positions of authority. He gives this as evidence of the continued intractability of the problems posed by gender issues.

Chapter 4, "Family and Work in the Context of the North-European Welfare State" by Yōko Ōtsuka, focuses on the family in order to see what light this might throw on gender issues in Danish society, which takes the individual as its basic unit. She finds that although eligibility for care support in the form of nursery and parental leave systems is described as a right of the individual, in actual practice it has been a right of the family or of marriage partners and treated as a matter of choice. In other words, he considers that at present countries of Northern Europe are looking

for the best way to balance a range of concerns including "women in the workplace", "gender equality", and "the rights of the child".

The short articles in this section are "Gender and Japanese Employment Practices" by Kimiko Motoki, "Equal Pay" by Masumi Mori, and "What is meant by Gender Budgeting?" by Yayoi Sugihashi.

7.5 Evaluation

This is a valuable book that provides a wide coverage of the economic history of gender both in its geographical range and in the spread of historical periods. Further, by focusing on the household as an economic unit, it views both the economic activities of the individuals within the household and the economic activities of the household as a unit of management whose purpose is to manage the household from a gendered perspective. Since gender issues related to the household are of growing importance in present-day society, it can be said that the viewpoint of this book also gives it a contemporary significance.

However, in the opinion of this particular reader, there are three aspects that could have been improved. First, in its approach, the book seeks to show how gender issues are linked to a wide range of economic activity. Yet it was not always easy to understand either how each article was linked to the overall theme of the book, or how each article was linked to the others. If there had been a concluding chapter as well as an introductory one, this could have been used to clarify the various interconnections between the parts and the whole. Second, the book's title is *Consumer Society and the Economy*, but consideration of this topic is mainly confined to the two chapters of Sect. 3. Readers are likely to have expected more articles with a similar focus. Third, two of the short articles, "Women's Role in the Brewing of Saké" by Akiko Yoshie and "'Nursing Sisters' and the Modern State" by Aya Takahashi, deal with professions where gender barriers are disappearing, however slowly, with the appearance of women in the former and of men in the latter. Since this is an area that is of great relevance to the globalising society of today, we need historical studies that approach it from a comparative framework.

These shortcomings do not detract from the overall value of this work. It deserves to be read by all those interested in socio-economic history, as an economic history of gender that freely explores a wide range of regions and periods.

Chapter 8
Review of Toshiko Himeoka, Mayuho Hasegawa, et al., *Jendā* (Kindai Yōroppa no Tankyū 11) (Gender: In Search of Modern Europe 11)

Minerva Shobō, Kyoto, 2008

Nobuko Okuda

Twenty years have passed since Joan Scott's seminal *Gender and the Politics of History* was translated into Japanese. Since then, many historians have adopted the concept of gender to analyse labour and the everyday lives of ordinary people in the past. Their researches have extended into more officialised and/or masculine areas, such as warfare, the institutions and cultures of politics, nationalism and the public sphere. Although Japanese specialists in Occidental history were actively analysing a wide range of subjects, until the 1970s women's history was almost always divided into isolated episodes. However, second-wave feminism and the boom in social history of the 1970s and 1980s encouraged more historians, especially female historians, to explore women's experiences in the past. As historical research on women accumulated, later generations of historians became increasingly aware of the pitfalls of conventional women's history. They came to realise that it was not enough to either explore the "hidden" history of women or highlight the elite women who participated in feminist movements. They perceived the necessity of adopting a comprehensive framework that would allow a structural approach to women's history. The translation of Scott's book therefore provided the opportunity for an indisputable breakthrough in historical research into women in Japan. By offering a theoretical basis, it has attracted more academics to the field now known as gender history.

A comparison of two series on world history shows the way in which the approach to historical research changed during the last thirty years of the twentieth century.

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Both were published by Iwanami Shoten, one of the most prestigious academic publishers in Japan. The first, the 31-volume Iwanami Series of World History, which appeared during the years 1969 to 1971, contained about 300 articles, but no single article or section dealt explicitly with women. There were just a few short mentions, such as the role of women workers during the two world wars and the life and ideas of Mary Wollstonecraft. However, when Iwanami Shoten published a new series of world history (in 29 volumes) thirty years later, during the years 1997 to 2000, seven chapters had titles containing the words "gender" or "women", and there were several others that dealt with gender issues. Japanese scholars today are finding various and imaginative ways of using the concept of gender to analyse the history of European countries. This book is a showcase for their research.

The subject matter of each chapter is as follows:

Chapter 1, "Hands of rescue and hands of usurpation" by Mayuho Hasegawa, is a case study of a French surgeon and obstetrician, Guillaume Mauquest de La Motte (1655–1737) of the Cotentin Peninsular in France. She shows how the development of obstetrics displaced the traditional midwife, despite the skills that had been developed through generations of experience, and turned childbirth into a scientific profession monopolised by learned men. In an age where baptism was of supreme importance, de La Motte put his hands into the wombs of women undergoing complicated births in order to baptise their babies as well as to save the lives of the mothers. He believed that this would ensure the salvation of the babies even if they died before they could be delivered. De La Motte considered midwives and other women who assisted during childbirth to be ignorant and cruel, and never thought of teaching them his skills. Hasegawa's analysis reveals that even in a field that concerned the bodies of women themselves, men were able to use their monopolisation of the world of science to cheapen the knowledge that women had accumulated through practical experience.

Chapter 2, "The Man's Share" by Sadae Kawamura examines male participation in the women's suffragette movement in Britain by focussing on the activities of Frederick William Pethick-Lawrence (1871–1961) and other men as part of the Women's Social and Political Union. Kawamura points out that they challenged contemporary norms of manliness as well as making an invaluable contribution to the women's suffrage movement, even though their position was only auxiliary. After the initial realisation of female suffrage in 1918, however, another side of the picture can be seen. Pethick-Lawrence was elected as a Labour M.P. in 1923. Although his maiden speech took up the issue of widows' pensions, his interest later moved from feminism and the welfare of women to public finance. After the Second World War, he was elevated to the peerage and as Secretary of State for India and Burma played an important role in the negotiations leading to India's independence. Emmeline (née Pethick), Frederick's wife, was a suffragette herself and also stood for Labour in the general election of 1918, although she was unsuccessful. She did not seek election after that, and was regarded primarily as the wife of an M.P. Kawamura indicates that Frederick's participation in the women's suffrage movement may have been motivated by his involvement with Emmeline rather than by commitment to the cause itself. She therefore suggests that even if male suffragists were free from one type of manliness, they may still have been under the control of other types.

In Chapter 3, "The Male Choir Movement in Nineteenth-Century Germany", Akira Matsumoto, analyses the formation of the German Male Choir Alliance in 1862, a time when the separation of gender roles was becoming a feature of the emerging model of the modern family. Male choir associations functioned alongside gymnastic and shooting clubs as spaces for social interaction between male citizens that allowed them to express their enthusiasm for war, the fatherland and fraternity. Male choir associations helped to build the myths of nationalism and masculinity, acting as anti-establishment organisations for freedom and unification in the first half of the nineteenth century and as centres of patriotism after the foundation of the German Empire. Men raised their voices in praise of stereotypical male virtues, such as fidelity, heroism in the face of death, and self-sacrifice, providing opportunities for catharsis in a time of uncertainly. Matsumoto also shows how social class affected the choir movement, since male choirs were also 'clubs' where lower-class men could sing, discuss politics and nurture their manliness, while their wives stayed at home looking after the children. Thus the male choir movement of nineteenth-century Germany had a strong gender bias and was quite unique in breeding "good" citizens in the negative sense, as Max Weber noted in 1910.

Chapter 4, "Healthy Mothers and Strong Descendants" by Hiroshi Nakasatomi, focuses on the formative period for social welfare in the United States, between the 1870s and 1920s. He has analysed decisions of the Supreme Court to show "how gender regulated the political and institutional discourse of the judgements of the Court, while at the same time it was constructing the system of gender through its political and authoritative power" (p. 164). The Supreme Court decided that the legislation limiting women's working hours was constitutional, but on the other hand, it ruled that minimum wage legislation was not. The two judgements seem contradictory. However, Nakasatomi shows that they complemented each other since both were grounded on the principle of using the gender-based division of labour to cement women's economic dependence on men.

Chapter 5, "The Genderisation of workers during the process of modernisation" by Toshiko Himeoka, focuses on the development of social insurance policy in Germany at the end of the nineteenth century. Widows' pensions and refunds of female workers' insurance payments at the point of marriage were easily established, but the rights and conditions of women workers were neglected. The social insurance system defined family morals by demarcating legal marriages from cohabitation, and legitimate children from illegitimate ones. The government and conservative groups within society assumed that female workers were married women trying to earn a supplementary income, which allowed them to be treated as cheap labour. Himeoka also takes the fact that August Bebel (1841–1913) of the German Social Democratic Party saw women as housewives to be evidence that the genderisation of workers had deeply affected even socialist parties.

Chapter 6, "War and Gender" by Mitsuko Sunayama, is an analysis of women's associations on both sides of the Spanish Civil War of the 1930s. Some women from the Republican side did question the gender norms of the day and try to cross the gender border. On the other hand, the Nationalists viewed women as devout Catholics who were good wives and mothers. After the Civil War, gender-equality

elements of Second Republic legislation were repealed and emphasis was placed on the restoration of tradition. However, although the overall atmosphere of Franco's Spain was reactionary, the widening in the public sphere for women of the Civil War years, and the accompanying general change in female consciousness, had a long-term influence on both sides. In other words, the Civil War and the war-related mobilisation of women seem to have had a continued effect on gender relations in Spain.

Chapter 7, "Telling History Through Gender" by Mari Kikukawa, questions why the word "gender" does not feature in Italian historical writing. She points out that even before "gender" was popularised in the English-speaking world, the topic was being considered in Italy, but primarily in works of social history that took a Marxist approach and emphasised women's subjectivity. Italian Marxist historians have been sceptical about gender history because it often relies solely on methods of discourse analysis. Kikukawa also points out that in Italy there has been an essentialist focus on physical differences between men and women rather than on "gender" as a social construct. As a result, she suggests that "there is a cultural aspect to the actual concept of gender" (p. 332).

This book also includes short research guides on gender history in Britain, the United States, Germany, France, and Spain that give useful starting points for the beginner.

Every article in the book is an example of excellent research and shows new possibilities for the application of the concept of gender to the study of history. They have sparked off many ideas in my head, and I would therefore like to finish by raising a few issues that Japanese specialists in Western history might like to consider.

The main questions of the book are "What has been the dominant view of gender in modern Europe? How has it been constructed, strengthened and reconstructed and how has it changed over time?" (p. i). Each article provides answers to these questions, and raises further questions in turn. Kikukawa's comment on essentialism in Italy is particularly thought provoking. Why has an essentialist view been widely accepted in Italy even though it is regarded as outdated elsewhere in Europe? What is the situation in Japan, in other Asian countries, or in Africa and Latin America? What might be the cause for different understandings? It is too easy to dismiss essentialism as an approach that belongs to the days before Scott. By contrast, Kikukawa's comment urges us to research the cultural and social contexts that have influenced the ways in which sexual differences are understood.

With regard to the cultural background to the understanding of gender, more could be learnt about the construction of gender systems from careful attention to differences within Europe, and to differences between Europe and other parts of the world. The book did not cover all of Europe, with no chapters devoted to any Scandinavian country, to the Eastern part of Europe including Poland and Rumania or, of course, to Russia. We know that there has been considerable diversity within Europe, for example in both family structure and women's work. If these regions were included, how would our understanding of gender in Europe change? And if we were to extend our perspective beyond Europe and compare it to Asia or Africa,

what image would we obtain of the modern *European* characteristics of gender systems?

On the other hand, the time span of this book is limited to the period from the early nineteenth to the early twentieth centuries, with the notable exception of Hasegawa's article, which examines the late seventeenth century. We need to know more about how gender systems were constructed and transformed before the nineteenth and after the mid-twentieth centuries in order to be able to investigate the peculiarities and generalities of gender in *modern* Europe.

All the authors agree that the gender system in modern Europe is based on separate spheres, such as 'paid work for men, domestic work for women', 'the public sphere for men, the private sphere for women' or 'men represent knowledge (authority), women represent ignorance'. An exception is Kawamura's article on male suffragists, which showed men as playing a role in women's struggles. But male suffragists attract interest just because they were acting in opposition to early twentieth century norms of separate spheres. Kawamura mentions the emergence of research that suggests that separate spheres were a myth; she therefore urges the reconsideration of gender roles in Victorian Britain. The book, however, largely accepts the separate sphere model. If we paid more attention to those who did not embrace social norms, or who were excluded from them, and to the ways in which governments, dominant social groups and neighbourhood communities reacted to such people, in negotiating with them, or through inclusion or exclusion, we could capture the richness of the historical past more fully.

While Nakasatomi is conscious that social class had a differentiating effect on women's experiences, the other authors did not pay much attention to class or to other dividing factors, such as ethnicity. Another gap was the lack of attention to sexual orientations and gender identities outside the norm. Those are areas that Japanese academics have yet to explore fully.

Although gender has become more acknowledged among historians as a field of research, many still consider gender history to be "women's" history. This has led to a sort of tokenism according to which it is thought to be enough if one part of a chapter, or one section of a book, is devoted to consideration of women's issues. However, this book clearly shows that gender history is essential to the understanding of modern European history. It is time for historians, and not only historians but all researchers, to recognise that the issue of gender is an indispensable part of their studies, whatever their discipline might be.

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