

Summary of Doctoral Dissertation
Social Work and Economic Development in Modern Japan

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Introduction

Although a market economy enables efficient resource allocation, it does not necessarily bring about a desirable result from the viewpoint of fairness. This is because severe income inequality or poverty may disturb social stability and not guarantee equality of opportunities. The policy related to income redistribution is justified on the basis of this concept. However, without perfect information regarding an economic activity, the government may disturb the efficiency of a private economic activity. Since attainment of the optimal balance of efficiency and fairness is a very difficult subject in economics, an empirical analysis is necessary.

Does Japan's historical experience provide significant implications on this subject? In general, political intervention is needed in the supply of public goods, which are generally difficult to supply in a market. In Japan, social work supplying public goods through the government-supported private sector mushroomed throughout the entire country after World War I. Social work played an important role in the redistribution of goods in prewar Japan and helped to ease vulnerability against risk.

Undoubtedly, the heterogeneity of income level in the economy is greatly dependent on the diversity of the institutions that efficiently distribute material and human resources. Education and health institutions accumulate human resources and help to reduce birth rate. Legal institutions that protect healthy economic activity by investors contribute to the development of a capital market. Finally, the improvement of resource allocation through these institutions is related to economic growth. Taking these facts as our point of departure, it is important to analyze the role of social work in preventing poverty.

Previous research excludes program evaluation in terms of the effect of the social work, although the creation of the institution is focused upon. However, the fact that various social works were established and mushroomed over the entire country in prewar Japan must not be disregarded. Analyzing the economic impact of these institutions would contribute new knowledge to economic history. In recent years, it is suggested that the mechanism of correcting market failure is not only the responsibility of the government but also that of nonmarket economic organizations in

the private sector. This suggests the possibility that social work can efficiently offer public goods that are difficult to supply in the market by the government.

This thesis regards social work as a system of easing the vulnerability of a household or an individual to risk and proves that social work lead to an improvement of efficiency in resource allocation. Moreover, the implication regarding the impact of social work on redistribution and resource allocation through social welfare, which arises in the process of economic development, is also obtained in the thesis.

Chapter 1: Childcare Centers and Female Labor Supply in Agricultural Households

In modern Japan, half of the total labor force is engaged in the agricultural sector. In addition, it contributes to industrial development since it is closely related to the nonagricultural sector. Further, female workers account for half of the total workers in the agricultural sector and those in the agricultural sector account for 60 percent of the total female workforce. It was proposed that a woman must allocate her time not only for housework but also for farming and sideline occupations in order to increase the efficiency of resource allocation in agricultural households. Recent investigation has demonstrated that a woman's farming hours continued to increase with agricultural integration, which is a feature of agrarian labor supply in modern Japan. In interwar Japan, married women in farming households decreased their domestic labor hours and increased their farming hours. However, nothing has been speculated regarding how women could reduce the number of hours spent on housekeeping and what were the means of reducing housework. This chapter examines the impact of childcare centers on female labor supply of rural households in interwar Japan.

I use the following two approaches to estimate the impact of childcare on female labor supply in interwar Japan. First, I compare the number of children receiving childcare in Kyoto by referring to data obtained through national census and find that almost every household with an infant in the area where a nursery was established left their children at the institution. Moreover, historical documents suggest that the demand for such institutions originated from the incentives of securing steady labor

supply in order to deal with household vulnerability to climate-related risks as well as receiving good care in terms of sanitation and education at a low cost. Second, using longitudinal data on agricultural households from Nōka Keizai Chōsabo (Agricultural Household Survey), I estimate the female labor supply function and test the basic unitary household model, taking into consideration external child rearing. These results indicate that women whose children receive childcare are more likely to resolve the trade-off between nursing and working and chose to work outside.

The key finding in this chapter is that childcare significantly eases women's burden of nursing and enables them to pursue farming and sideline occupations. This result indicates that outsourced care in social work is important for explaining the long-term increase in female labor supply and efficient resource allocation in the household economy by women. Another implication of the result corrects the common notion in the history of social welfare that childcare centers do not conform to nursing and farm life.

Chapter 2: Intra-household Resource Allocation and Child Labor in Agricultural Households

Since industrialization in Japan was attained without being dependent on child labor, children's participation rate in the agricultural sector is low. In this chapter, it is shown that child labor in the agricultural sector in interwar Japan was higher than what was conventionally recognized. In order to ascertain the relationship between child labor and the accumulation of human resources in the context of the Japanese experience, this chapter also quantitatively proves the sequential relationship between child and adult labor supply and the differences in the gender gap from the perspective of intra-household resource allocation.

I employ the following approaches to obtain a general picture of child labor in the Japanese agricultural sector. First, by estimating the participation rate using data on agricultural households, I find that the participation rate of children is higher than the rate computed from national census. Moreover, since the participation rate and the working hours of females are higher than that of males, it was evident that females faced more disadvantages than males in the labor market. Second,

estimations of the child labor supply function using micro data of agricultural households suggested that their labor supply was sequentially determined in resource allocation. The estimation result of the conditional labor supply function for the purpose of clarifying the sequential course in resource allocation revealed that the older female child of the household who substituted for her mother and grandmother had long working hours. Furthermore, although participation in the agricultural labor force by a male tended to expand the gender gap, it was found that participation by a woman did not contribute to reduce this gap.

The increase in the female labor supply through labor integration in the agricultural sector increased the volume of housework and reduced the older female child's leisure time and educational investment. In addition to this tendency, the participation of males in the agricultural labor force tended to expand the gender gap in agricultural households. These empirical results will serve as significant knowledge on the gender gap in educational investment in farm villages in modern Japan.

Chapter 3: Distribution and Function of Childcare Centers

In the process of economic development, a community can provide private mutual insurance or income transfers instead of formal insurance. Even if legal or market insurance for risk is lacking, long-term reciprocity formed in the community can create an alternative institution and complement market and public goods. Childcare centers that mushroomed throughout Japan after World War I eased the trade-off between child-rearing and labor in agricultural households and contributed to a stable labor supply. However, the conditions for the establishment of a day care center and its effects have not been described in the history of social work . In this chapter, I regard social work as part of the public-goods supplied by a community, quantitatively analyze the distribution they undertake and their functioning as a factor of production, and obtain a new implication regarding the agricultural sector in interwar Japan.

The analytical results revealed that the establishment of day care centers was strongly characterized as a risk management measure by farming village communities. In areas where the weather risk was high or income levels were low,

various organizations and individuals jointly invested in these facilities in order to mitigate susceptibilities to uncertainties faced by households. Furthermore, such investments were found to be promoted to a greater extent in areas with stronger community ties. The difference between areas with and without a day care center was estimated using propensity score matching and difference-in-differences methods. The result indicated that the establishment of a day care center in an area increased its rice yield per tan.

The empirical results of this study indicate that the incentive for a community to systematically provide public goods in order to smooth income levels increased in areas where agricultural yields were highly uncertain. These results suggest a new possibility, namely, that the mitigation of impoverishment through social work that developed in Japanese farming villages during the interwar period also reduced the incentive for farming households to switch to the nonagricultural sector.

Chapter 4: Incomplete Market and Precautionary Savings

For the purpose of clarifying the function of social work, it is important to reveal the manner in which households deal with risk. The purpose of this chapter is to analyze the consumption and savings of urban households in prewar Japan based on micro data and to clarify the decision-making of households regarding educational investment and management in terms of uncertainty.

In the early 20th century in Japan, the employment contract of factory workers was characterized by low commitment and was subject to cancellation by either employers or employees. Therefore, the turnover rate was very high regardless of skilled or unskilled labor. Although corporate welfarism became prevalent in some major companies before and after the First World War, the nationwide turnover rate remained constant at a high level. In such an economy, precautionary savings are important as a risk management tactic by workers. If the household prepares for uncertainty beforehand, the influence of income shocks due to unemployment or illness can be reduced and consumption can be smoothed. Therefore, verification of precautionary savings, which clarifies the preparedness of workers for income fluctuation, is fundamental in policy evaluation. In this chapter, the tolerance of a

household for uncertainty is verified using the family income and expenditure survey of around 1920.

First, the analysis of the existence of consumption smoothing in the event of an income shock revealed that the possibility of household expenditure being affected by income fluctuation could not be avoided and the capital market was not sufficiently developed. The perfect insurance hypothesis was not rejected for certain goods; however, education and the expenditure on child rearing were robust to income shock. These results quantitatively support the incompleteness of the market assumed by conventional research and suggest that the household recognized the importance of educational investment for the child. Second, I analyzed the existence of precautionary savings using the historical records of Osaka that investigated the household over a period of one year. It was evident that the increase in income variance tended to increase the savings related to permanent income and that workers save with a precautionary motive. Furthermore, analyzing the relation between these actions and the income level revealed a possibility that precautionary saving was conducted only by the middle income group.

The result obtained in this chapter indicates the concern regarding educational investment by an urban household and the institutional intervention for easing it; it was also proved that a low-income household was vulnerable to risk that increases the efficiency of resource allocation. The empirical results of this chapter suggest that an urban household recognizes educational investment as important and that low-income households were vulnerable to risk. This also implies that institutional intervention for easing vulnerabilities will increase the efficiency of resource allocation.

Chapter 5: Educational Investment and Birth Behavior

Japan accomplished high economic growth from the 1960s to 1980s and this was termed the “economic miracle.” One of the important demographic factors for this success was a reduction in the number of children in the labor force and an increase in the working-age population due to a decline in the birthrate. While the reduction in the number of children in the labor force saved public expenditure on education, it led to a sharp rise in the educational cost per child. Moreover, the increase in the

working-age population caused a continuous increase in labor input and a high saving rate. As a result, labor productivity and capital stock increased in the long run. These elements that influenced economic development produced by demographic transition are collectively termed the demographic dividend. In Japan, a demographic dividend was enjoyed from the beginning of the 1930s to the first half of the 1990s.

In this chapter, I focus on an improvement in educational investment in prewar Japan and analyze the impact of such investment for females on the birth rate. From the perspective of microeconometrics, I utilized valuable micro data in which personal information required for analysis of birth rate is included.

First, based on the fact that there was a great improvement in educational investment for females from the second half of the 19th century to the first half of the 20th century, the return to education was estimated by a regressing wage function. As a result, it turned out that an increase in the number of years of education by one year led to a rise in wages by approximately 6.8%. Moreover, it was evident that elementary school graduates earn 25.8% higher wages and secondary school graduates earn 95.1% higher wages compared to nongraduates. The estimated result reveals that the return to education is positive and the wage difference between nongraduates and graduates of elementary school was rather large in the 1920s.

Comparative analysis using stratified sampling for the age group of 12–31 years and over 32 years reveals that the return to education declined from 7.3% to 6.8%, improved from 21.8% to 32.7% for elementary school graduates, and declined from 124.5% to 88.7% for secondary school graduates. It was evident that the improvement in the return to education of individuals who had completed 4–6 years of education was remarkable. This result implies that while the gap between elementary and secondary school graduates for the return to education reduced from the middle of the 19th century to the 20th century, there was a great improvement in the return to elementary school education.

Finally, I analyze the impact of wage improvement on the decision of having the first child using survival analysis. The result of the analysis reveals that the improvement in expected wages in the labor market through the expansion of educational investment delays the decision to have a first child by increasing the opportunity cost of childbirth and childcare. This shows that the accumulation of

human resources through positive educational investment by urban households is a factor that led to declining birth rates in prewar Japan.

Chapter 6: District Committee System and Infant Mortality

Rational decision-making based on opportunity cost is related to low risk of infant mortality and stillbirth, since the decision of the number children is taken on the basis of the infant mortality rate. Therefore, a reduction in the infant mortality risk is an important policy issue in rational family planning. In postwar Japan, the district committee system developed in the 1920–30s functioned as a central system of social work and laid the foundation of the welfare commission system. In this chapter, I analyze the medical opportunities offered by the district committee system and reveal that it contributed to a reduction in the infant mortality rate in a poor household.

A poor household has low levels of qualitative and quantitative social information or an insufficient social network; such a household cannot access available resources. Therefore, in order for the system and resources to function effectively in reducing infant mortality rate, a system that connects households to a relevant social institution is necessary. This chapter emphasizes that infant mortality was a remarkable problem in low income groups and focuses on the functioning of the district committee system that enabled pregnant women and sick babies to have access to relevant medical institutions.

Empirical results using Tokyo city data reveal that the medical opportunities offered through the district committee helped to decrease the infant mortality risk of poor households in the following manner. The ward where the poverty index was high had a higher infant mortality rate and the improvement in mortality rate in that ward was also higher than that in other wards. The district committee has conducted social research and relief activities to gain information on and understand the position of poor households; moreover, the committee enabled pregnant women, nursing mothers, and sick babies from these households to have access to medical institutions. Such mediating behavior helped to efficiently ease infant mortality risk.

Thus, the analytical result implies that social work are effective in reducing the

infant mortality rate in modern Japan. Another implication of the result is the effectiveness of the district committee system. This fact will serve as significant knowledge when analyzing the demographic transition of Japan.

Supplementary Chapter: District Committee System and Facility Investment —Institutional Complementarity

This chapter proves the institutional complementarity between the provision of childcare centers and the district committee system. The district committee system appoints local residents as committee members who are responsible for the provision of relief activities to the poor. This particular policy eased the government fiscal burden and enabled the formation of a nationwide organization that continued as a postwar welfare commission system. As a result, this system functioned as a fundamental social institution and a social safety net in prewar Japan.

Previous literature has focused on human resources in Japan and conducted analyses using information on their opportunities, assets, and public office experience. Taking the findings of early literature as our point of departure, in this chapter, I analyze the qualifications and school reports of candidates—which have not been analyzed before—for the district committee and reveal the capability of the committee as a whole.

First, the attributes of the committee candidate are analyzed from the information acquired from historical records. These records indicate whether the candidate is a fair person, popular among local residents, and well-versed in the information pertaining to the area. The interesting discovery is that the motivation to become a committee member is related not only to reputation or pure altruism, which is indicated in previous studies, but also to the special occupation economic incentive. Second, the characteristic differences between regular and retired members are compared in order to examine the aptitude of a member for continuing the committee. The results indicate that not only the opportunity cost but the human network, trust, and peculiar features of the area affect continuous service. It is also suggested that the probability of continuation is significantly high among candidates who have been involved in establishing childcare centers before. Although these findings do not deny

a committee's middle class attribute that is conventionally indicated, they emphasize that a rich person with a lot of leisure time is suitable for membership. In light of the contribution of such a committee to the development of social capital, which has recently garnered much attention, it is shown that the capability of developing rich human relations and reliability are important characteristics for the selection of committee members who would provide continuous service to the committee.

These empirical results suggest a possibility that two or more social work may function complementarily by employing people with the characteristic described in this chapter.

Conclusion

The income level of every country and each region within countries is greatly dependent on the diversity of the institutions that distribute material and human resources. Social work related to education or health help to accumulate human resources and lower birth rate. Moreover, the legal system that facilitates healthy economic activity by an investor contributes to the development of the capital market. The improvement of resource allocation through institutions is related to economic growth. Taking these facts as the point of departure, this thesis recognized social work as a system that eases the vulnerability to uncertainty and proved that there is an increase in the efficiency of resource allocation through the functioning of such institutions.

In Japan, since agricultural production is based on small farms, it is important that there is an improvement in the efficiency of resource allocation in households as part of farmhouse management. In interwar Japan, childcare centers expanded to relatively low-income rural areas through social work that were capable of risk management in the community. These facilities contributed to ease the tradeoff between childcare and female work and provide relatively high quality of care for children of working mothers. Thus, the provision of childcare centers increased agricultural productivity slightly and reduced the gender gap by reducing the burden of childcare on women. Social work in rural areas improved the efficiency of resource allocation, decreased the tendency to give up farming by reducing the vulnerability to

risk and uncertainty, and facilitated the accumulation of human capital.

Further, it was found that social work in urban areas also help to accumulate capital stock. In cities, the poor were not able to accumulate precautionary savings and were exposed to the risk of unemployment or disease. The district committees identified such individuals through social research and helped pregnant women and sick babies by providing them access to medical institutions through medical vouchers. This decreased infant mortality risk and enabled people to make rational birth decisions in the process of demographic transition through improvement in educational investment. Thus, the impact of social work on the continuous decline of birth rate and accumulation of human and material resources as a demographic dividend was substantial.

In modern Japan, rapid economic growth led to income differentials and poverty, which disturbed social stability and equality of opportunity. The pursuit of efficiency and fairness in an economic activity may conflict. This implies that excessive reliance on one of the functions of the market or the government cannot improve social welfare in the economy. Ensuring optimal balance between income redistribution and efficiency and the complementarity between the market and state is one of the objectives of economics. Income redistribution through social work in prewar Japan is relevant in this regard.

In developing Japan, mobility and uncertainty in the labor market were very high. However, the government was unable to understand the condition of the poor when there was a great necessity for political intervention in poverty after World War I. Providers of various services were restricted to civilians who were well versed in the particular area, as the supply of a unitary social safety net—like a social security system—by the government was an unreal expectation. As a result, the responsibility of supplying public goods was borne by social work , which included self-help activities in the private sector and the policies complementing such activities. In prewar Japan, while nonprofit and nonmarket organizations dealt with market and government failure and contributed to providing public goods, the government supported coordination by the organizations.

Childcare centers and the district committee system decreased the fiscal burden by reducing the search cost and improved the flexibility of supply of services.

Therefore, social work increased the efficiency of resource allocation. These findings suggest the possibility that capital accumulation is promoted when the system in which public goods are supplied by the private sector is established in the process of economic development.

It must be noted that the statute regarding a childcare center was not enacted in interwar Japan and that for district committees was also not enacted until just before the Sino-Japanese War. Although social work did not specify the national minimum in prewar Japan, it functioned effectively as a system that eased the vulnerability against risk for a community. The empirical results in this thesis not only indicate the importance of the economic effect of social work that has been overlooked thus far, but also show that the work provides implications for establishing a balance between fairness and efficiency in economic development.