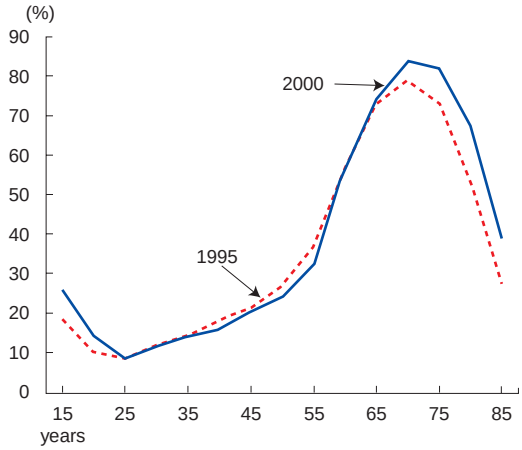

Fig. 1. Ratio by Age Group of Population Mainly Engaged in Farming

points. During this period, the speed of decrease in household members did not change greatly, so an increase in the rate of the laborforce (ratio of the employment rate to household number) slowed the speed of decrease.

Next, we would like to look at the age group in which this increase in rate of entry occurred. Fig. 1 shows the ratio by age group of Population Mainly Engaged in Farming for 1995 and 2000, and a large increase can be seen in people aged 15-19 and 70 and over. The 15-19 group may be influenced by changes in the survey items, but the 70 and over group indicates that an increasing percentage of people are entering agricultural jobs in spite of their age.

As the number of people 70 and over entering work increases, the number of household members is also rising, so the actual number is increasing greatly, and the ratio of the total overall has risen drastically. In other words, while the rise in 70 and over has slowed the trend of decline in the agricultural laborforce, on the other hand it has resulted in increasing the advanced age [of the laborforce] even more.

Looking at Working Days Engaged In Family-operated And Custom Farming, one more indicator of the agricultural laborforce, in the range of "150 days and over", the margin of growth for the 70 and over group increased from a 4 point increase between 1990-95 (20.4% to 24.6%) to a 7 point increase between 1995-2000 (24.4% to 32.2%). From this indicator, it can be seen that the number of people aged 70 and over engaged in farming fulltime is growing.

From the above, it was understood that the slow in the speed of decline in the agricultural laborforce is due to people aged 70 and over continuing to work in farming and not retiring. As it is certain that the 70 and over agricultural laborforce will decrease due to death, it is predicted that the speed of decline in the agricultural laborforce will increase hereafter.

Econometric Analysis of Farm Household Behaviour during the Farmland-use Adjustment Process

Takeshi FUJIE

1. Objective

This study predicts demands for organization of farmland-use coordination in some cases. Using micro data set for agricultural households, mainly in hilly and mountainous areas, we estimate econometric models and conduct simulations in each scenario. Also, we investigate how agricultural household costs of searching farmland affects the rate of abandoned land or rent in the farmland market.

2. Method

Micro data concerning farmland-use adjustment is applied to estimate the econometric model. We use two types of data. One is from a mountainous and hilly farming area (City A in Hiroshima Prefecture). The other is from a flat farming area (City B in Nagano Prefecture). Using the data, a probit or ordered probit model is estimated. Simulation analysis is performed using these estimates on the basis of three scenarios. The scenarios of the simulation are as follows. (i) Scenario of decreasing agricultural successors (scenario 1) (ii) Scenario of promoting residential measures (scenario 2) (iii) Scenario of excusing agricultural financial support (scenario 3). Also, apart from these simulations, we construct a theoretical farmland market model focused on search and mismatch.

3. Outline of the results

(1) For scenario 1, potential demand for organization of farmland-use coordination increases with decreasing agricultural successors. Agricultural households with no regular farm workers have the intention to use this organization. In addition, reduction of family size leads to an increase in the probability of utilization of farmland-use coordination organization.

(2) For scenario 2, potential demand for the

purpose of securing farmland demanders increases temporarily (Case1). The reason for this is that the availability of farmland is improved with the increasing number of families. On the other hand, potential demands decrease in securing farming successors (Case2). This is because increasing the number of families leads to improve availability of farmland and quality of the farm labor force.

(3) For scenario 3, potential demand for organization of farmland-use coordination increases with agricultural financial support. If a Corporation in the research area provides financial support for agricultural machinery or new entrants, the probability of utilizing farmland-use coordination organization increases.

(4) A farmland rental market model is constructed. This model focuses on search cost explicitly and adopts the circular model in order to develop. This model suggests that search cost and rent may move in the same direction both in the short and long run (Figure and Table are omitted).

4. Related Publications

Fujie, T. (2002) The Behaviour of Agricultural Households under Farmland Use Adjustment Process, *Japanese Journal of Farm Management*, 40(1), 73-78

Fujie, T. (2003) The Effects of Transaction Cost on Farmland Transaction : Farmland Market Model Focused on Search and Mismatch, *Journal of Rural Economics*, 75(1), 9-19

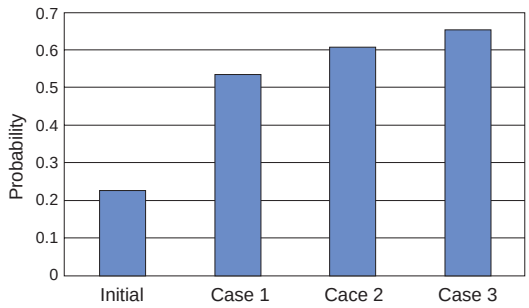

Fig. 1. Changes in Probability of Farmland-Use Coordination Organization for Suppliers (Scenario 1)

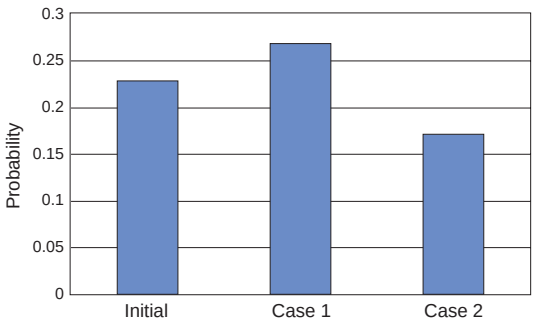

Fig. 2. Changes in Probability of Farmland-Use Coordination Organization for Suppliers (Scenario 2)

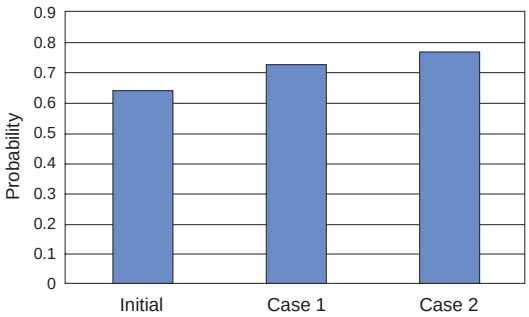

Fig. 3. Changes in Probability of Farmland-Use Coordination Organization for Demanders (Scenario 3)

Table 1. Scenarios of Simulation

Scenario	Case	Description
Scenario 1	Case 1	If suppliers in farmland market have no regular farm workers.
	Case 2	In addition to case1, if suppliers in farmland market have no agricultural successors.
	Case 3	In addition to case2, if there exist no three-generation groups of households.
Scenario 2	Case 1	If there are no live-alone household in suppliers in farmland market.
	Case 2	In addition to case1, if suppliers in farmland market have agricultural successors.
Scenario 3	Case 1	If all demanders have heavy machinery (combine harvester or drier machine).
	Case 2	In addition to case1, if the number of professional farmers among demanders in farmland market is doubled.