Key Factors in Determining Internal Migration to Rural Areas and Its Promoting Measures – A Case Study of Hirosaki City, Aomori Prefecture*

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Abstract

This article examines the impact of population decline on regional economies by looking at the case of Hirosaki city in Aomori prefecture and analyzes the promotion of relocation as a means of countering that impact. In Hirosaki city, the population decline due to the outflow of youth is not only reducing the total production of the region but is also affecting the labor market structure. In order to consider how to promote relocation to Hirosaki, we analyzed migration from urban to rural areas. We found that in many cases, relocation to rural areas was people returning to their hometowns. This analysis also revealed that the presence of parents' homes is the strongest factor attracting people to rural areas. People relocating to rural areas tend to make the move after voluntarily taking actions that lead to the relocation, such as quitting their jobs. Among such people, a sense of satisfaction or happiness with work-life balance is significantly strong, indicating the likelihood that they will settle in rural areas over the long term. As a policy implication, the article points out the need to promote relocation with emphasis placed on returning to hometowns and housing measures.

Keywords: population decline, inter-regional migration, return to hometowns, promotion of relocation

JEL Classification: Classification: J61, J68, R11

I. Preface

This paper examines the case of Hirosaki city in Aomori prefecture, a middle-size city facing rapid population decline, in order to grasp the problems rural cities face when "Regional Reinvigoration" is a popular cause. The population of Hirosaki city is about

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180,000, which is in the median range among the 260 or so cities with a population of 100,000 or more.

Population decline negatively affects the regional economy. As Mizuno and Ono (2004) and Ohtake (2009) suggests, if the labor productivity or the substitution between capital and labor is insufficient, the regional gross product decreases and the regional economy shrinks. As a result, the region loses employment opportunities and faces further population exodus. Population decline results in negative externality, as Genda, Oi and Shinozaki (2005) indicated.

Why do provincial areas face population decline? Hirosaki city has experienced a large natural decline due to aging. The natural decline has been aggravated by a social decline, where there are more out-migrants than in-migrants. According to *Aomori Prefecture Vital Statistics*, in Hirosaki city in 2014, deaths exceeded births by 1008, which is a large natural decrease. On the other hand, out-migrants exceeded in-migrants by 476 and such a social change accounts for a third of the population decrease. Furthermore, most of the out-migrants are aged 15 to 24 and their destinations are mainly in the Tokyo metropolitan area.[1]

Harris and Todaro (1970) explained that people seeking higher wages move from low-wage rural areas to high-wage urban areas. Such moves are apparent between the mid-1950s and the early 1970s. They assumed inter-regional migration is one-way migration from rural to urban areas, and they did not consider migration in the opposite direction. Such migration equalizes the wages and unemployment rates in both areas, and it can finally resolve the regional economic differences.

However, Masuda (2014) and Otani and Igawa (2011) indicate that population outflow from rural areas are still found after rapid economic growth, and there is a strong correlation between the differences in the job-to-applicant ratio and population migration. Though people have been moving continuously from rural to urban areas, we cannot find a sign of a convergence in economic differences and population migration. Rather, Masuda (2014) points out that out-migrations from rural areas after 2000 are caused by deteriorations in the local economy and employment, due to several factors including the shock of a strong yen to manufacturers, a decrease in public works, and population decline.

We know from Ohta and Ohkusa (1996), Ohta (2005, 2007), Higuchi (1991), Lee (2012) and others that local employment and wage differences account for inter-regional migration. In fact, we know the local job-to-applicant ratio and the employment rate outside the prefecture has a strong correlation and there are a large number of out-migrations in areas in which there are large wage differences in urban areas. Isoda (2009) and Ishiguro *et al.* (2012) suggest that not only economic factors, but higher education, employment, and human networks are important factors to determine migrations.

On the other hand, there are few economic studies on migrations from urban to rural

[1] See *Hirosaki City Population Vision* (Hirosaki City, 2015) for details on vital statistics.

areas, while there are many sociological and demographic studies on the topic[2]. This kind of sociological study, such as Esaki *et al.* (1999, 2000), conducts quantitative research on men from Nagano and Miyazaki prefectures using high school alumni lists. This study examines the differences in the tendency to U-turn by different generations and identifies inducing and disrupting factors of migration. Note that "U-turn" refers to city dwellers who return to their hometowns, while "I-turn" refers to city residents who relocate to rural areas other than their hometowns. "J-turn" stands for city dwellers who relocate to rural areas near their hometowns.

The proportion of U-turn migrants is high for the young generation because they tend to return to their hometown relatively early after finding jobs. In addition, U-turn is promoted when one shares a hometown with one's spouse. The triggers for U-turns are mainly pull factors (inducing factors), such as the care of one's parents and the desire to live in rich natural surroundings.

Recently, Nishino (2009) and Ishikura (2009) performed analyses on regional migration through quantitative studies using alumni lists as synthetic studies focusing on Kamaishi city in Iwate prefecture, known as the "Social Sciences of Hope" project. Nishino (2009) clarifies that the status of education continuance rate, migration and employment, and the economic status of Kamaishi city differ across the generations.

Ishikura found that the proportion of U-turners is high for the young generation and that U-turns occur less than ten years after the initial move. The latter is the same conclusion as Esaki *et al*'s. Three U-turners out of four live with their parents. Nishino suggests that Esaki's view that U-turning is promoted to the wife's hometown takes an opposite causal relationship because the unmarried tend to U-turn.

Otani and Igawa (2011) and Otani (2012) examined the measures to promote migrations from three metropolitan areas to other places, which we call "U-turn" or "I-turn" (hereafter U/I-turn), in order to alleviate rural population decrease and to reduce economic gaps between the regions. He points out that U/I-turners who experience unemployment and job replacement may move back to the urban areas. In addition, he proposes policies to help the U/I-turners settle in rural regions, such as providing information on U/I-turning and promoting regular employment.

Though previous studies focus on the timing and motives for migration, they do not consider the conditions that make the move possible or the triggers that make the move final. We do not know how individual characteristics and socio-economic circumstances affect the reasons to move or how the motives to move differ. We need more concrete studies to alleviate rural population decline and to promote population growth. The object of this research is to compensate for these shortcomings in previous research.

Our paper is organized as follows. Section II outlines the effects of population decline on the local economy by examining the structural changes of gross regional products and local

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[2] According to Kishi's 2014 analysis using *Report on Internal Migration in Japan* (2013), the number of migrants from non-three-metropolitan area to three-metropolitan area is 540,731, while that of the opposite direction is 448,164. He points out that the latter accounts for 48 percent of the total migrations and is an essential phenomenon to understand the internal migration.

labor markets. Section III introduces the data we used in this paper and outlines the characteristics of migrants through the descriptive statistics. Section IV analyzes the motivations for moving to rural areas and the conditions that make such movements possible. Section V conducts an econometric analysis of job satisfaction and life satisfaction to consider the possibilities of settlement. Section VI concludes our paper.

II. Population decline and changes in the local economy

In this section, we examine the effect of population decline on regional economies through the structural changes of gross regional products and local labor markets. The effects of population decline at the macroeconomic level are summarized as follows. The labor productivity may rise when the substitution of labor by capital or labor-saving occurs. If it does not occur, population decrease leads to the decrease of gross products (Mizuno and Ono 2004).

The gross regional products at a certain time is defined by the following equation:

$$Y = \alpha HE \tag{1}$$

Let α,H,E denote labor productivity per hour, working time, and the number of employment, respectively. When N and L denote the population aged over 15 and the labor force, we obtain labor force rate $\beta = L/N$ and employment rate $e = E/L$. Then the equation (1) is rewritten as:

$$Y = \alpha \times H \times \beta \times e \times N. \tag{2}$$

If it is shown by terms of change rates, we obtain:

$$\dot{Y} = \dot{\alpha} + \dot{H} + \dot{\beta} + \dot{e} + \dot{N}. \tag{3}$$

That is, the economic growth rate is equal to the sum of growth rates of labor productivity, working hour, labor participation rate, employment rate and population aged over 15. The results of Hirosaki city from 2000 to 2005 and from 2005 and 2010 are shown in Figure 1.

We can see drastic decreases in labor participation rate, employment rate and population growth rate in both periods. Continuous outflow of young people and progressive aging decreases labor participation rate and employment rate as well as population growth rate. In addition, as working hours also decrease, the local economy will shrink if sufficient growth in labor productivity does not occur. Especially between 2005 and 2010, the growth rate in labor productivity is so small that the population decline greatly affects the local economy.

Table 1: Changes in real gross regional products and labor inputs, Hirosaki city

Periods	$\dot{Y}$	$\dot{\alpha}$	$\dot{H}$	$\dot{\beta}$	$\dot{e}$	$\dot{N}$
2000-2005	1.308	2.047	0.025	-0.346	-0.289	-0.115
2005-2010	-1.237	0.564	-0.522	-0.446	-0.299	-0.536

Note: Annual rates of changes by percentage.
Sources: Statistics Bureau, *Population Census*, and Aomori prefecture, *Aomori Prefecture Regional Economic Accounting*

In a regional economy with a large population decline, change in labor productivity plays an important role in the economic growth. Though productivity improvement is achieved by the efforts of private business, this is impossible in regions in which the majority of private businesses are small. The region is thus required to attempt to improve productivity by various means, such as cooperation between local universities and local governments.

An observation of the supply structure of labor helps to understand labor inputs of the region. It is well known that labor force rates and employment rates differ between sexes or across the ages. In Japan, they are extremely low for women and the elderly. According to *the 2010 Population Census*, the sex ratio for the population in Hirosaki city is 45.8 percent for men to 54.2 for women. Compared to ten years ago, the male ratio dropped by 0.2 points and vice versa. The labor force ratio of men is 69.4 percent, while that of women is 50.1 percent, which is about 20 points lower than men. It has been decreasing continuously from 73.0 percent in the year 2000.

Aging strongly affects the labor force. Table 2 shows the age structure changes in the labor force from 1980. The proportion of those aged less than 40 has decreased constantly since the 1980s and has dropped as much as 12.8 points in 35 years. On the other hand, that of those aged more than 70 has increased 14.8 points and this may affect a decrease in labor force rate.

As mentioned before, an increase in labor productivity can compensate for both population decline and productivity loss due to labor supply changes. The popularization of higher education and the sophistication of industrial structure can improve labor productivity. Let us observe how the industry structure has changed.

Table 3 shows the industry specialization coefficient of Hirosaki city, calculated using the *Population Census*. Here the coefficient is the number of times workers are engaged in a certain industry compared to the national average. The table shows that Hirosaki city specializes in the agricultural and forestry industry. As of 2010, the worker proportion of these industries was 3.7 percent nationally, while in Hirosaki city it is 14.7 percent, which is 3.97 times as much as the average. We can see that no other industry except the public service is as regionally specialized as agriculture and forestry.

Table 2: Changes of age structure in labor force, Hirosaki city

Ages	Labor Force (Persons)					Age Structure Coefficient (Percent)				
	1980	1990	2000	2010	2015	1980	1990	2000	2010	2015
Under 40	74,086	65,205	61,005	50,638	45,976	38.5	34.1	31.6	27.6	25.7
40-49	27,642	28,208	26,395	22,656	23,210	14.4	14.8	13.7	12.3	13.0
50-59	22,259	25,624	27,420	25,129	24,411	11.6	13.4	14.2	13.7	13.7
60～69	14,703	20,592	24,791	26,340	27,583	7.6	10.8	12.8	14.4	15.4
Over 70	11,446	16,712	25,268	34,821	37,258	6.0	8.7	13.1	19.0	20.8
All Ages	192,291	191,217	193,217	183,473	178,733	100.0	100.0	100.0	100.0	100.0

Source: Statistics Bureau, *Population Census*

Table 3: Changes in the industry specialization coefficient

Industries	2000	2005	2010
Agriculture and forestry	3.293	3.229	3.968
Construction	0.905	0.853	0.836
Manufacturing	0.561	0.526	0.587
Electricity, gas, heat supply and water	0.885	0.885	0.905
Transportation and communication	0.746	0.569	0.546
Wholesale, retail trade, eating and drinking services	1.004	0.984	0.975
Finance and insurance	0.902	0.871	0.797
Real estate and goods rental and leasing	0.646	0.603	0.567
Services	1.068	1.109	0.905
Government, except elsewhere classified	1.163	1.175	1.205
Industries unable to classify	0.204	1.435	0.937

Source: Statistics Bureau, *Population Census*

We can also see that the specialization coefficient for construction has decreased continuously since 2000. Since the Koizumi cabinet, regional public works have been decreased and the local construction industry has shrunk as a result. The financial and insurance industry began to disassemble and consolidate branch offices to overcome worsening economic circumstances due to the population decline, lowering the specialization coefficient.

Next, let us focus on the effects of population decline. The food and service industry face direct damage from consumption decrease due to population decline because they are mainly a face-to-face service and are labor-intensive. Table 3 shows the specialization coefficient decreases for wholesale and retail, food, and services. The worker proportion of services has steadily increased from 27.4 percent in 2000 to 33.7 percent in 2010 at the national level, while in Hirosaki city, it has decreased from 31.7 percent in 2005 to 30.5 percent in 2010. We can see that population decline indicates a decrease in the number of consumers, and that affects labor markets.

We have observed how population decline affects the regional economy. The out-migration of youths from the region leads not only to population decline, but to the aging of the labor market, and decreases in the labor force rate and employment rate. The aging of the labor market interrupts industrial advances and labor productivity progress. As a result, the labor productivity has not increased enough to cancel out the effects of population decline, regional gross products have dropped, and the regional economy has shrunk. Furthermore, population decline has negative externality and brings about more population outflows.

Negative externality due to such a population decline restricts the options for residence which is a critical human right for individuals. Furthermore, it means that the restriction of the right to choose occurs only in certain areas and it violates the equal opportunities for individuals who cannot choose the places in which they are born. What measures can we adopt to improve such a situation?

If the shrinkage of the regional economy brings negative externality, the growth of the regional gross products can counteract against the externality. From equation (2) shown above, *ceteris paribus*, raising labor productivity is the first policy to grow the gross products. However, as mentioned above, the improvement of labor productivity is interrupted because the majority of private businesses are so small that they are difficult to invest in and the labor force is aging.

The low proportion of the highly-educated group in the labor force is also an important problem. While the average proportion of university graduates is 32.2 percent nationally, it is only 18.3 percent in Aomori prefecture.[3] Aggravating the already low education continuance rate is the fact that people who migrate to Tokyo for education are not returning in sufficient numbers. Furthermore, people who graduated from universities within the prefecture tend to find jobs outside the prefecture. According to the graduate statistics as of March 2015, 749 out of 2244 or 33.4 percent of university graduates continued to jobs within the prefecture.[4]

As Ohtake (2009) pointed out, if only a certain proportion of the population can find new and innovative ideas then population decline means a reduction of ideas. If human capital accumulation from education is less than the effect of population decline, we cannot expect labor productivity growth through technological innovation.

Next, it is possible to consider an extension of working hours to raise the gross products from the equation (2). However, such an extension results in fewer children and population decline in the future. There is also a limit to how much we can increase the gross products by increasing the labor force rates and employment rates of the elderly and women, now that the proportion of the elderly in the total population is 25.6 percent according to *the 2010 Population Census*.

As a last resort, it is necessary to increase the population aged 15 and over. It is possible to accept workers from abroad. As Ohtake (2009) points out, the importation of workers from overseas would cause the region to incur greater social costs, and so it should be undertaken with careful consideration.[5] We can also consider the possibility to raise the reproductive ability of the region. Note that the reproductive ability of Hirosaki city is already low due to an increase in unmarried adolescents and late marriages due to the outflow of youths. Figure 1 shows the population changes by three age categories, comparing Hirosaki city to nationwide averages. According to Masuda's 2014 population decline stages, Hirosaki city is at the first stage in which the "aged population increases and both child and productive-age

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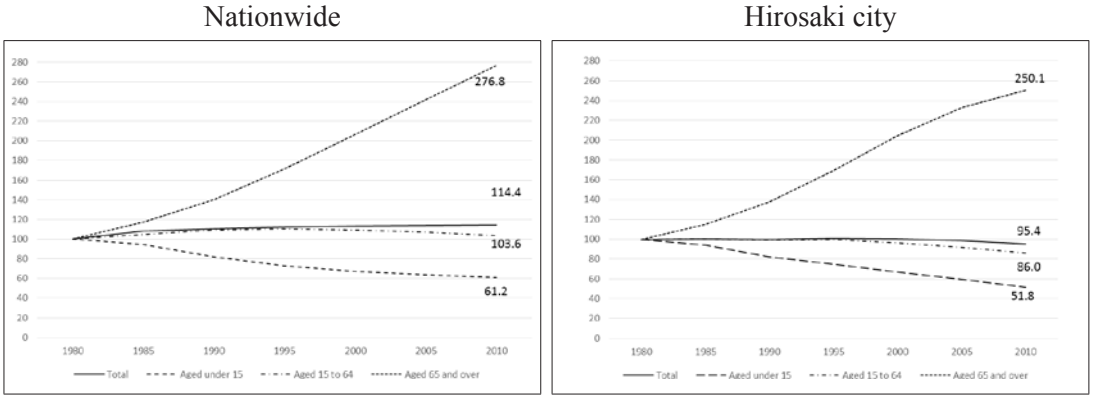
[3] Figures derived from *the 2010 Population Census*.

[4] Figures derived from Aomori prefecture, *Report on employment referrals for university graduates* in March 2017.

[5] See Ohtake (2009) for details concerning the acceptance of workers from abroad.

Figure 1: Population changes by three age categories



Source: The statistics bureau, *Population Census*

populations decrease." However, the decrease in the child population is so large that it has decreased by almost half in 30 years - being 51.8 in 2010 when it was 100 in 1980. Thus, without a drastic recovery in total fertility rates, we cannot expect population recovery sufficient enough to cancel out the outflow from the region. Even if the population recovered drastically, much time is required to raise the population aged 15 and over and we cannot expect this to happen in the short term.

Next, we can consider "population rearrangement," which Masuda (2014) suggested as a positive policy against population decline. This means that to change the population inflow into metropolitan areas, we need policies to "call back and invite" youths who have moved from the urban area back to the countryside. Masuda (2014) points out that such a population rearrangement improves the depopulation of rural areas and the excess population of urban areas, and finally, increases the total population as a whole.

Thus, let us consider the determinants of internal migrations and concrete promotion policies in order to "call back" the locals who have moved to the other areas by U-turn or J-turn and to "invite" the urban residents by I-turn.

III. Characteristics of Migrants

III-1. Data and Definitions

The data we used in this article is collected from our original survey. The investigation object area is "Chunan-Tsugaru region[6]" which includes Hirosaki city and its surrounding municipalities. Hirosaki city is an academic city which is unique in having a national university in Aomori prefecture and its population is about 180,000. Its surrounding area is

[6] Chunan-Tsugaru region includes 7 municipalities such as Hirosaki city, Kuroishi city, Hirakawa city, Nishimeya village, Fujisaki town, Owani town and Inakadate village.

an agricultural area of which the primary crop is apples.

Our survey was conducted in February 2015 and our investigation consisted of 1,880 people of both sexes aged from 20 to 70, selected by a stratified two-stage sampling along with the population ratio from the official voters' lists. The survey was executed by postal mail and the number of answers was 1,000.[7] The research focused on 586 people, because 29 people whose age or sex are unknown, 367 married women and 18 students are subtracted from the total sample.[8]

Next, we want to define "migration" in this paper as follows. We classified our samples into the following five types by migration patterns: (1) fixed residents who have not lived outside the hometown, (2) U-turners who had lived outside but now live in the hometown, (3) J-turners who had lived outside but now live near the hometown, (4) I-turners who were born outside the object area but now live there, and (5) in-migrants who are from another area within Aomori prefecture.[9]

III-2. Characteristics of Migrants

Here we discuss the characteristics of migrants through descriptive statistics. Table 4 shows the proportion of migration types by attributes. We can see that over 90 percent of the migrants to the Hirosaki area are originally from this region. As only I-turners are originally from outside the region, 278 out of 304 or 91.4 percent of the migrants have roots in this region.

The proportion of U-turners varies greatly between the sexes, at 16.4 points higher for women than for men. Masuda (2014) pointed out that the out-migration of women from rural areas is an important problem for the sustainability of the regions, but this result shows that a certain proportion of women who have out-migrated returned to the rural areas.

We cannot find a significant difference across age groups through the Chi-square test. This means that the proportions of migration types are unchanged across the generations. For those aged over 30, thirty percent of residents are U-turners and J-turners. And the I-turners share less than ten percent across all generations. Furthermore, as the proportions of migration types are stabilized for those 30 or older, the majority of inter-regional migrations occurs in the 20s.[10]

We can also see the proportion of those who have received higher educated is high for I-turners. According to the human capital theory, investment in education raises the expected

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[7] See Lee et al. (2015a, 2015b) for investigation details.

[8] We excluded married women from our analysis because the determination of relocation is influenced by the intention of her spouse. We also excluded students from our analysis, to focus on the socio-economic circumstances of the samples.

[9] We determined the hometown based on the location of the junior high school from which the resident graduated.

[10] The questionnaire asks, "When did you move to the place where you are now living from the former region?" and so we can specify the age that the movement occurred. However, we cannot see the life stage because we did not ask whether the respondent was married or not, or had a child or not.

Table 4: The proportions of migration types

Unit: Percent

Attributes			Fixed residents	U-turner	J-turner	I-turner	In-migrants
		N	268	196	28	26	54
Sex	Male	410	55.1	19.4	4.4	7.3	13.7
	Female	176	42.0	35.8	5.7	6.2	10.4
Age	20-29	53	66.3	17.5	0.0	10.0	6.3
	30-39	102	48.1	26.6	5.2	5.8	14.3
	40-49	117	48.3	26.4	5.0	9.0	11.4
	50-59	145	49.4	25.7	5.8	5.0	14.1
	60-70	169	46.7	29.4	5.4	6.5	12.0
Education	Junior high or less	50	52.1	31.0	9.9	0.0	7.0
	High school	319	54.5	24.9	4.7	5.1	10.8
	Junior college or vocational school	104	51.8	22.3	4.9	5.8	15.2
	University or graduate school	112	31.3	34.3	3.6	15.7	15.1
Marital status	Unmarried	284	52.3	32.7	3.7	3.7	7.7
	Married	300	48.3	23.4	5.5	8.3	14.5

Note: The difference of proportions within the attribute categories is significant for sex, education and marital status by Chi-square tests. The numbers missing figures in the education and marital status categories are 1 and 2, respectively.

wages. As the inter-regional wage differences are high for the high-educated, the propensity to migration is greater for university graduates or those who are more educated. However, as Lee (2012) suggests, the inter-regional wage differences for graduates are not found and guaranteed a certain level of income irrespective of regions. As I-turners tend to find jobs that can earn high wages, there are more highly-educated I-turners.

III-3. Jobs and actual life stages of migrants

Table 5 shows the employment status by sex and migration types. First, we can see that men show significant differences between the types, while women do not. This shows the merit of employment through movement is limited for women. Focusing on men, the proportion of regular employment is significantly high for I-turner, J-turner, and in-migrants. On the other hand, the proportion of regular employment is low for U-turners, and thus U-turners tend to face unstable employment, though it seems to be the same moreover.

Table 6 shows the vocational differences between the migration types. We can see that the proportion of managers, professionals and technicians is high for U-turners and in-migrants, while that of professionals and technicians is high for I-turners, compared to the other types. As Lee (2012) suggests, specialists and technical workers can move relatively freely because they can earn almost the same amount irrespective of inter-regional movement by utilizing their skills. Around 5 percent of jobs are agriculture-related for all the types except in-migrants, so agriculture is an important core industry in this region.

Table 7 compares the annual income by the migration types. Ranked in descending order

Table 5: The status of employment by sex and migration types

Sex	Migration type	Self-employed and family worker	Regular employee	Non-regular employee	Unemployed
Men	Fixed residents	22.5	47.3	7.1	23.1
	U-turners	18.3	44.4	17.6	19.7
	J-turners	26.1	56.5	8.7	8.7
	I-turners	12.5	58.3	8.3	20.8
	In-migrants	9.8	65.9	9.8	14.6
Women	Fixed residents	5.8	39.4	34.6	20.2
	U-turners	2.0	38.0	38.0	22.0
	J-turners	0.0	33.3	66.7	0.0
	I-turners	25.0	0.0	50.0	25.0
	In-migrants	0.0	38.5	46.2	15.4

Note: The differences among migration types for men are significant at 10 percent($p<0.096$), while those for women are not.

Table 6: The proportion of job types by migration types

(Unit: Percent)

Migration type	Managerial workers	Specialist and technical workers	Clerical workers	Selling workers	Sales workers	Service workers
Fixed residents	3.5	1.2	24.0	1.8	0.6	21.6
U-turners	7.5	3.0	30.1	0.0	0.8	12.0
J-turners	0.0	0.0	27.8	0.0	0.0	5.6
I-turners	0.0	5.3	15.8	0.0	5.3	21.1
In-migrants	9.8	7.3	17.1	7.3	0.0	19.5
Total	5.2	2.6	25.1	1.6	0.8	17.3

Migration type	Skilled workers	Security workers	Production process workers	Agriculture, forestry and fisheries workers	Transport workers	Others
Fixed residents	5.3	8.2	12.9	5.3	8.2	7.6
U-turners	6.0	3.8	13.5	4.5	11.3	7.5
J-turners	5.6	11.1	22.2	5.6	22.2	0.0
I-turners	0.0	5.3	15.8	5.3	10.5	15.8
In-migrants	2.4	12.2	2.4	2.4	12.2	7.3
Total	5.0	7.1	12.6	4.7	10.5	7.6

for the average income is: I-turners, in-migrants, U-turners, J-turners and fixed residents. Ranked the same way, the median income is: I-turners, in-migrants, U-turners, J-turners

Table 7: The distribution of annual income by migration types

(Unit: 10 thousand yen)

Migration type	Average	Median	Bottom 10%	Bottom 25%	Top 25%	Top 10%	Standard Variance
Fixed residents	258.6	200.0	84.0	120.0	320.0	500.0	263.7
U-turners	295.1	240.0	84.0	132.0	400.0	600.0	227.5
J-turners	284.4	240.0	84.0	120.0	400.0	700.0	209.6
I-turners	383.0	260.0	57.0	106.0	455.0	1000.0	379.6
In-migrants	301.9	245.0	72.0	133.5	400.0	600.0	217.5

and fixed residents. According to the standard variance, I-turners have the largest variance and J-turners and in-migrants have the smallest. Comparing fixed residents and U-turners, both the average and median income are about 400 thousand yen higher for U-turners than the fixed residents. The income difference is almost none for lower income group, but it is larger for the higher income group. The average income of I-turners is higher than any other types. The reason is that the income of top 25 percent is higher than that of other types. As we have seen, it may be caused by the fact that the proportion of specialists and technical workers is relatively high for I-turners. While the income of the lower 25 percent is less for I-turners than any other types, this result means that the I-turners are polarized in their annual incomes.

III-4. Estimation of the annual income

Let us estimate the annual income for two objects. One is to test whether the compensated wage hypothesis holds or not. When we ask whether income changed or not after relocation, 57.2 percent (548 persons) of migrants answered it has decreased. The compensated wage hypothesis can account for an economic rationality that they decided to move in spite of the income decrease. However, it is necessary to clarify what factor compensated for the income decrease.

It is also necessary to examine whether migration leads to income increases or not. Inter-regional migration requires various psychological costs such as loss of human networks and anxiety about unknown places, as well as direct moving costs. What kind of economic merits are there to move outside the prefecture compensating for such a cost? Otani and Igawa (2011) clarifies the fact that private companies evaluate U/I-turners as persons who "have different senses or experiences from the local people"- according to the questionnaire for small and medium businesses located at non-three-metropolitan areas. We also would like to understand whether such a fact can be found or not through the income estimation.

The wage function we adopt is as follows. The dependent variable is the logarithm of annual income. Explanatory variables are male dummy, age, age squared, education dummies (the reference is high school) as individual attributes for income. We also add dummies that express employment, profession and company size, as well as the working hours. We use the dummies of migration types and reasons to migrate, to examine whether compensation effects and income increases exist or not.

Using Model 1 of Table 8, we can see the difference among the migration types using

Table 8: Estimation of the annual income

Variables	Model 1		Model 2	
	Coefficient	S. D.	Coefficient	S. D.
Male	0.3263	0.07 ***	0.3594	0.10 ***
Age	0.0543	0.02 ***	0.0443	0.03
Age squared	-0.0005	0.00 ***	-0.0004	0.00
Working hours	0.0157	0.00 ***	0.0158	0.00 ***
Education Dummies				
Junior high school	-0.0616	0.12	-0.0334	0.17
Junior college or professional school	-0.0117	0.07	-0.0691	0.10
University or graduate school	-0.0560	0.08	-0.1204	0.10
Employment Status Dummies				
Self-employed	0.0870	0.09	0.2131	0.12 *
Non-regular	-0.5243	0.07 ***	-0.5665	0.10 ***
Profession Dummies				
Managerial jobs	0.5917	0.10 ***	0.5249	0.15 ***
Professional and technical jobs	0.3449	0.08 ***	0.3040	0.11 ***
Clerical jobs	0.2867	0.08 ***	0.2577	0.12 **
Firm size dummies				
Small-sized (30 -90 employees)	0.0810	0.08	0.1632	0.11
Middle-sized (100-299 employees)	0.2354	0.09 ***	0.3201	0.13 **
Large-sized (300 employees or more)	0.3598	0.07 ***	0.4055	0.10 ***
Migration Reasons Dummies				
"Living with parents"			-0.0788	0.11
"Convenient to do jobs"			0.1423	0.10
"Living environment"			-0.0571	0.12
Migration type dummies				
U-turner	0.0907	0.06		
J-turner	0.0859	0.12		
I-turner	0.2354	0.12 *		
In-migrant	0.0528	0.09		
Constant	3.1365	0.36 ***	3.4840	0.64 ***
Sample size	418		234	
Modified determination coefficient	0.5284		0.5227	

Notes: ***, ** and * denote significance at the 1%, 5% and 10%, respectively. The sample size of Model 2 is different from that of Model 1, as Model 2 deals with U-turners, J-turners, and I-turners only.

fixed residents as a reference group, to examine whether migration can lead to income increase or not. The result is the male dummy is positive, age is positive, and age squared is negative are consistent with general results of wages based on seniority. As all the education dummies are insignificant, the effects of education investment are limited. Employment status strongly affects the annual income because the non-regular employment dummy is a

significantly strong negative. Professions cause the income differences, as all the profession dummies are significant. Working hours and annual income have a positive correlation.

Let us look at the migration type dummies. All the dummies except the I-turner dummy are insignificant. We cannot expect U-turning and J-turning to bring income increases, considering fixed residents as references. These results can be explained from two sides. From the side of labor demand, companies will not give special consideration to outside applicants. From the side of labor supply, it means that the education, training and experiences received outside the prefecture are equally evaluated as the ones received inside. Though there is a great difference in the education or training costs between inside and outside the prefecture, the evaluations of both are equal. Thus, the economic efficiency of education investment outside the prefecture is low.

However, as Isoda (2009) points out, many young people from rural areas have no choice but to move to make educational investments, as higher educational institutions are concentrated in the three metropolitan areas. In such cases, they must incur moving costs as well as educational costs, but they possibly cannot recoup such costs when they make a U-turn or a J-turn. As a result, the young movers for education tend to stay in the urban areas. As our research investigated the people living in a rural area, we cannot explain how much of the proportion of movers for education go back to their hometowns. The comparison of the people who have returned with those who have stayed is left for future research.

To test the compensated wage hypothesis, we estimated the annual income for U-turners, J-turners, and I-turners only in Model 2 of Table 8. Looking at the signs of the migration reasons dummies,[11] "Living together or closely with parents or step-parents" dummy and "Living environment" dummy is negative, while "Convenient for myself or spouse's work" dummy is positive. Thus, the people who have moved to live together or closely with parents or step-parents, or to enjoy the living environment were ready to face a decrease in income before relocating. Noting that all the dummies are insignificant, we cannot state that the compensated wage hypothesis is consistent.

However, these results have an important meaning to consider for migration promoting policies. Locals and their spouses who return and live together or closely with their parents expected to accept a decrease in income. That is, our results suggest that the financial assistance for three-generation houses and the practical support for households that live together with parents are candidates for effective migration promoting measures.

[11] The definitions of migration reason dummies are as follows. The "living together or closely with parents or step-parents" dummy includes "returned to parents' home," "close to parents' home," and "live at step-parents' home." The "life environment" dummy includes "school district or ease of attending school" and "attracted by living or natural environment." The "convenient for myself or spouse's work" dummy includes "close to workplace or school" and "close to spouse's workplace or school."

IV. Reasons for migration, the conditions that make it possible and triggers for its decision

In this section, we analyze the reasons for migration (U-turn, J-turn, and I-turn), the conditions that make it possible and the triggers for the decision. Even though many hope to move to rural areas, actual movement is not easy. Migration requires not only direct costs such as moving expenses and transportation costs but also has associated opportunity costs for finding jobs and so on. For those with families, there are additional problems such as finding educational institutes or jobs for spouses.

Migration exacts various psychological costs in the form of the loss of human networks and anxiety about unknown places in addition to the economic costs. Thus, even if many hope to move to rural areas for various reasons, it is difficult to actually move without fulfilling the conditions that make it possible. Even if they are fulfilled, people cannot take action without triggers for the decision. Let us see the reasons for migration by the migration types.

Table 9 shows the reasons for the move to the current location by migration types. As U-turners and J-turners are originally from the region, respondents whose answer indicated a "return to parents' home" are the largest proportion at 73.5 percent (210 persons). "Close to workplace or school" and "Close to parents' home" is the second most frequent response. Among I-turners and in-migrants, the largest proportion of respondents cited "close to workplace or school" as their reason, at 61.5 percent of I-tuners and 56.3 percent of in-

Table 9: The reasons for migration by the migration types (Multiple answers)

Reasons for migration	U/J-turners (210)		I-turners (26)		In-migrants (32)	
	N	Proportion	N	Proportion	N	Proportion
Returned to parents' home	161	73.5	5	19.2	7	21.9
Close to parents' home	22	10.0	0	0.0	2	6.3
To live together in spouse's parents' home	8	3.7	3	11.5	4	12.5
Close to spouse's parents' home	7	3.2	3	11.5	1	3.1
Close to workplace or school	34	15.5	16	61.5	18	56.3
Close to spouse's workplace or school	5	2.3	1	3.8	0	0.0
Convenient for shopping	8	3.7	1	3.8	2	6.3
Proximity of recreational equipment or other hobby related reasons	2	0.9	0	0.0	0	0.0
There is good transportation	4	1.8	0	0.0	2	6.3
School district or ease of school attendance	9	4.1	0	0.0	1	3.1
Considerations regarding children	9	4.1	0	0.0	1	3.1
Proximity to friends or significant others	8	3.7	0	0.0	2	6.3
To participate in local events	2	0.9	0	0.0	0	0.0
Attracted by the locals	0	0.0	0	0.0	1	3.1
Attracted by living or natural environment	10	4.6	4	15.4	6	18.8
Other	6	2.7	1	3.8	0	0.0

Note: Sample size differs from Table 4 as entries that did not answer the reasons for migration are omitted.

migrants.[12] As a certain proportion of all the types answered "Attracted by living or natural environment," we can see that the attractions of the Hirosaki area are widely known. On the other hand, few people answered "to take part in the local activity" or "attracted by the locals."

Next, let us focus on the conditions that make migration possible. As almost all the I-turners and in-migrants selected job-related answers like "employer had a branch office" and "I expected to be employed by turnover," let us focus on U-turners and J-turners. At this point, the conditions that make migration possible is thought to be greatly different, depending on the life stages at which the respondents consider the migration. As our data does not contain the indicators that specify the life stage of the migration, we differentiate our samples by the age that migration occurred.[13] Table 10 shows the conditions that make migration possible, depending on whether the move occurred at 29 or earlier or at 30 or later.

"Ability to live in parents' home" was the most important reason making migration possible, irrespective of the age that migration occurred. As Nishino (2009) suggested, returning to the hometown is the biggest reason for migration and our results are consistent with that finding. Ishikura (2009) found that three migrants out of four choose to live together with their parents at the early stage after migration. However, as Table 10 shows, living in parents' home is the primary condition that makes migration possible, and people often migrate on the condition that they live together with their parents.

In particular, the data indicates that movers at 29 or earlier base their decision to move on the existence of living accommodations or financial assistance from parents. Even for the

Table 10: The conditions that make migration possible

The conditions for U-turn and J-turn	Total (210)		Move at 29 or earlier(123)		Move at 30 or later (87)	
	N	Prop.	N	Prop.	N	Prop.
Ability to live in parents' home	139	66.2	90	73.2	49	56.3
The existence of residence or land other than parents' home	20	9.5	8	6.5	12	13.8
The possibility of livelihood support from parents	24	11.4	16	13.0	8	9.2
The possibility of livelihood support from relatives	0	0.0	0	0.0	0	0.0
The possibility of livelihood support from friends, close friends or acquaintances	2	1.0	2	1.6	0	0.0
Family understands relocation	22	10.5	11	8.9	11	12.6
Employer has a branch office	25	11.9	8	6.5	17	19.5
Expectation of employment by turnover	34	16.2	21	17.1	13	14.9
Expectation of being able to live without employment	11	5.2	6	4.9	5	5.7
Child is independent	1	0.5	0	0.0	1	1.1
Low cost of living	6	2.9	2	1.6	4	4.6
Public assistance for relocation	0	0.0	0	0.0	0	0.0
Other	3	1.4	2	1.6	1	1.1

[12] I-turners who answered "Ability to live in parents' home" are thought to have done so as their parents had moved to this area after their graduation from junior-high school, as junior high school location was the metric used to determine hometown location.

[13] The life stage means whether the respondents married or not, whether they have a child, etc. Obviously, only those who are married can site their spouse's hometown as a condition of migration. As Esaki *et al.* (1999, 2000) suggests, the attributes of the spouse are important factors for migration decisions.

movers at 30 or later, the "ability to live in parents' home" was a significant pull factor to attract people to the region.

Next, we will examine triggers for migration in Table 11. We will first focus on the U-turners and J-turners and differentiate samples by whether the migration occurred before or after 30 for the same reason mentioned before. Irrespective of the timing of migration, many respondents answered "I quit my job" as a trigger for migration. Of the respondents who cited the "Ability to live in parents' home," 29.4 percent of them also indicated they moved after quitting their jobs. Among the 16.9 percent of those who answered "there is no particular problem, but I was told to return to home," if accommodations existed for them, they choose to move positively. This is important to remember when considering migration promoting measures. The existence of parents' home as a residence is a pull factor to the region.

Next, we would like to better understand how the conditions that made migration possible differs according to individual attributes and socioeconomic circumstances. We conducted logit analysis with the dependent variables being parents' home dummy and job dummy. Parents' home dummy means the assistance from parents and indicated "yes" to "ability to live in parents' home," "the existence of residence or land other than parents' home," and "the possibility of livelihood support from parents."

Job dummy indicated "yes" to "Employer had a branch office" and "the expectation to be

Table 11: Triggers for U-turn and J-turn

Triggers for U-turn and J-turn	Total (210)		Move at 29 or earlier (123)		Move at 30 or later (87)	
	N	Prop.	N	Prop.	N	Prop.
My family became sick or injured	15	6.9	7	5.7	8	9.2
My family needed nursing	10	4.6	3	2.4	7	8.0
Problem occurred in parents' family	11	5.1	9	7.3	2	2.3
There is no particular problem, but I was told to return to home.	28	13.0	13	10.6	15	17.2
I got married	6	2.8	3	2.4	3	3.4
My child was born	3	1.4	2	1.6	1	1.1
My child began to attend elementary or junior-high school	1	0.5	0	0.0	1	1.1
My child entered high school	0	0.0	0	0.0	0	0.0
I bought my house	2	0.9	1	0.8	1	1.1
I graduated from school	26	12.0	23	18.7	3	3.4
I was employed in or around this region	16	7.4	11	8.9	5	5.7
Job relocation or reassignment	34	15.7	14	11.4	20	23.0
I found a job in Aomori prefecture	20	9.3	10	8.1	10	11.5
I became sick or injured	8	3.7	5	4.1	3	3.4
I quit my job	53	24.5	34	27.6	19	21.8
I was fired, the contract terminated	13	6.0	4	3.3	9	10.3
I was invited by friends	2	0.9	2	1.6	0	0.0
I was invited by relatives	0	0.0	0	0.0	0	0.0
I was invited by acquaintances	2	0.9	1	0.8	1	1.1
I had public assistance for relocation	0	0.0	0	0.0	0	0.0
Other	11	5.1	4	3.3	7	8.0

employed by turnover." The explanatory variables are male dummy, age, marital status dummy and education dummy as individual attributes, and self-employment dummy, non-regular employment dummy and logarithm of annual income as employment and living status. Furthermore, we add "Moved when young" dummy (that indicates the move occurred at 29 or earlier), "Employed in advance" dummy (that indicates a job is found in advance of migration) and the migration type dummy.

The results of the analysis are shown in Table 12. Migrants receiving assistance from parents tended to be unmarried and self-employed, as indicated from the dummies. They have a tendency to move when they are young, but not find a job in advance of migration, judging from the indicators of "moved when young" and "employed in advance" dummies. Thus, migrants receiving assistance from parents seek a job after migration.

On the other hand, migrants conditioned by jobs tend to find a job in advance of migration, derived from "employed in advance" dummy being positive. It means they decided to move because they found a job. Many migrants who indicated their parents' home as a condition are U-turners. Education dummies and annual income were not statistically significant. Though we expected highly-educated or high-income earners to be less dependent on their parents, the results did not support these assumptions. As a result, migrants who indicated

Table 12: The logit analysis of migration condition

	Parents' home dummy		Job dummy	
	Coeff.	S.D.	Coeff.	S.D.
Male	0.435	0.545	-1.710	0.847 *
Age	-0.010	0.017	0.003	0.022
Married	-1.144	0.469 **	0.258	0.663
Junior college or professional school	-0.096	0.450	-0.264	0.709
University or graduate school	-0.395	0.404	0.693	0.537
Self-employed	0.805	0.486 *	-1.403	0.749 *
Non-regular	0.200	0.469	0.297	0.644
Moved when young	0.609	0.344 *	-0.369	0.475
Employed in advance	-0.758	0.356 **	3.184	0.630 ***
Logarithm of annual income	-0.298	0.272	0.622	0.402
U-turner	1.289	0.375 ***	-0.206	0.515
I-turner	-0.911	0.787	0.120	0.756
Constant	1.749	1.745	-5.702	2.582 **
Sample size	218		218	
Pseudo determination coefficient	0.2212		0.3177	

Notes: ***, ** and * denote significance at the 1%, 5% and 10%, respectively.

their parents' home as a residence or economic assistance from parents tend to move first then find a job later. It can be an important point to consider when crafting migration promoting policy.

V. The possibilities of movers' settlement

In this section, we evaluate the possibilities of movers' long-term settlement using the measures of job satisfaction and happiness. To measure job satisfaction, each participant was asked: "How satisfied are you with your current job, income, and work-life balance, respectively?" The participants answered with a rating from 1 to 5, with 5 being "satisfied" to 1 being "dissatisfied" for each category. Happiness was measured by asking the question: "How happy are you now?" Participants were asked to rate their happiness between 1-10, in which 10 is "very happy" and 0 is "very unhappy."

The explained variables are the satisfaction with job, income and work-life balance and happiness, while the explanatory variables are working hours, the logarithms of annual income, and the dummies for individual attributes, employment status, professions, company sizes and migration conditions. The estimation method of ordinary least squares was used. The results are given in Table 13 and 14.

The estimated results of satisfaction for work-life balance is noteworthy. As the coefficient of parents' home dummy is positive and significant, many of the returners who migrated on the condition of the existence of family are satisfied with their work-life balance. This is likely due to the proximity of family fulfilling the conditions necessary for a

Table 13: Estimation of satisfactions

	Satisfaction with job		Satisfaction with income		Satisfaction with work-life balance	
Variables	Coeff.	S.D.	Coeff.	S.D.	Coeff.	S.D.
Male	-0.0650	0.15	-0.2166	0.15	-0.2518	0.15 *
Age	-0.0098	0.01 *	-0.0073	0.01	-0.0117	0.01 **
Working hours	-0.0096	0.00 **	-0.0163	0.00 ***	-0.0147	0.00 ***
Annual income	0.4729	0.11 ***	0.7012	0.11 ***	0.1397	0.11
Junior high school	0.4489	0.27 *	0.3052	0.28	0.5795	0.27 **
Junior college or professional school	0.4433	0.15 ***	0.1342	0.16	0.3184	0.16 **
University or graduate school	0.2968	0.17 *	0.2882	0.17 *	0.3828	0.16 **
Self-employed	0.1964	0.19	0.1965	0.19	0.3109	0.19 *
Non-regular	0.1432	0.17	0.2171	0.17	-0.0132	0.17
Managerial jobs	0.2082	0.23	0.1383	0.23	0.2464	0.23
Professional and technical jobs	-0.0138	0.17	0.1526	0.17	-0.2440	0.17
Clerical jobs	0.0527	0.18	0.1573	0.18	0.0692	0.18
Small-sized (30 -90 employees)	-0.2621	0.18	-0.1688	0.18	0.1428	0.18
Middle-sized (100-299 employees)	-0.2013	0.19	-0.2587	0.19	-0.0920	0.19
Large-sized (300 employees or more)	-0.0815	0.16	0.0211	0.16	0.0958	0.16
Parents' house condition	0.1268	0.13	0.0969	0.13	0.4015	0.13 ***
Job condition	0.1298	0.20	0.0977	0.20	0.1968	0.20
Constant	1.3610	0.56 **	-0.1622	0.57	3.4424	0.56 ***
Sample size	413		413		415	
Modified determination coefficient	0.0791		0.1328		0.0746	

Note: ***, ** and * denote significance at the 1%, 5% and 10%, respectively.

Table 14: Estimation of happiness

	Model 1			Model 2		
Variables	Coefficient	S. D.		Coefficient	S. D.	
Male	-0.9070	0.32	***	-0.8494	0.32	***
Age	-0.0317	0.01	***	-0.0298	0.01	***
Married	1.0933	0.32	***	1.0087	0.32	***
Child	0.4805	0.27	*	0.4795	0.27	*
Working hours	-0.0118	0.01		-0.0126	0.01	
Annual income	0.5538	0.20	***	0.5622	0.20	***
Junior high school	0.6309	0.49		0.4950	0.49	
Junior college or professional school	0.2542	0.27		0.2787	0.27	
University or graduate school	0.4875	0.29	*	0.5198	0.29	*
Regular employment	0.3104	0.33		0.2763	0.33	
Non-regular employment	-0.1847	0.29		-0.1274	0.29	
Managerial jobs	0.3906	0.39		0.4057	0.40	
Professional and technical jobs	0.2374	0.30		0.1962	0.30	
Clerical jobs	0.1369	0.32		0.1593	0.32	
Small-sized (30 -90 employees)	-0.0317	0.31		-0.0177	0.32	
Middle-sized (100-299 employees)	-0.3393	0.33		-0.3079	0.33	
Large-sized (300 employees or more)	0.0733	0.28		0.0958	0.28	
Parents' house condition	0.4616	0.22	**			
Job condition	0.3136	0.34				
U-turner				0.1512	0.23	
J-turner				0.3567	0.45	
I-turner				0.3564	0.47	
In-migrant				-0.2725	0.35	
Constant	4.5173	1.03	***	4.4919	1.03	***
Sample size	410			410		
Modified determination coefficient	0.1171			0.1077		

Note: ***, ** and * denote significance at the 1%, 5% and 10%, respectively.

satisfactory work - life balance.

Let us see the results of the happiness estimations. Table 14 shows that the happiness for married persons and those who have a child is significantly high. Higher educated people tend to feel greater happiness, as the university and graduate school dummy is positive and significant. Though the effect of education on annual income is limited, higher education affects happiness. However, employment status and professions did not have significant results.

As the parents' home dummy is significant, the existence of family appears to be a significant contributor to migration. This result shows that the migrants who move based on the existence of parents' home are more likely to settle long - term than the other migrants' group.

VI. New trials of assistance for relocation and settlement - Conclusions

As detailed earlier, population decline precipitated by an outflow of youth is not only reducing total production in the region, but is also affecting the labor market structure by causing the labor market to age. It also interrupts industrial advances and disturbs labor productivity. Furthermore, the shrinkage of the regional economy decreases employment and brings about more population outflow. To escape the vicious circle of regional economy shrinkage, the "population rearrangement" Masuda (2014) suggested is key. "Population rearrangement" is a directional change in the population flow from rural-to-urban to urban-to-rural.

In the latter half of this article, we analyzed the determinants of migration from an urban to a rural area. As a result, we obtain the following two keywords to promote movement from an urban to a rural area. One is "hometown." Every region has its strengths, merits, and inconveniences. In the course of daily life, people experience not only the merits of a particular location but also its inconveniences. It is difficult for a traveler or visitor to understand both aspects of a region. In order to understand all the complexities of a given location, it is necessary to live there. Over 90 percent of the migrants to Hirosaki we investigated were originally from this region. Therefore, effective migration promoting policy will be most efficacious when targeting those who have resided in an area previously.

Another one is "residence." Though employment is the primary condition that makes migration possible, it is important to realize that people view a residence as more impactful than employment. As previously highlighted, those who migrated due to the existence of their parents' residence tended to be highly satisfied with their work-life balance, had significantly greater happiness, and seemed to be satisfied with the migration. Successful migration promoting policy should continue to take this into account.

Next, we will examine the migration-promoting policies currently being implemented in Hirosaki city that targets people wishing to return to their "hometown" or "residence." First, there is the "Financial Support for Alumni Project," which grants a subsidy for alumni meetings held in the city. This project aims to create opportunities for former residents to return to their hometown, in the hopes of increasing the permanent residents and invigorating the local economy. As we have demonstrated in this analysis, over 90 percent of the migrants are returning to their hometown. Additionally, the migrants whose parents' home existed in the region tended to feel greater happiness and had a higher possibility of residing permanently. Creating reasons for former residents to remain connect to their hometown will stimulate them to return.

Second, there is support for finding employment by building connections between urban and rural areas. This project endeavors to recruit urban residents who have difficulty finding jobs for the agricultural industry, as it finds challenges in hiring younger workers due to the population outflow of working aged youths. It also aims to maintain new farmers through inter-municipality cooperation. Specifically, through cooperation with Izumisano city in

Osaka prefecture, the training and recruitment program for the apple farming industry provides young people who struggle to find employment with experiences in agriculture and rural life, allowing them to consider moving to a rural area. Clearly, this project aims to inject new farmers into the dying industry through migration, and to increase the employed population by employing local non-working youths in the agricultural sector.

Between the period of April to October in 2016, 60 people have already utilized this program to experience working in agriculture and living in rural areas, and their feedback was positive. Though it is unreasonable to expect dramatic short-term results from such projects, it can offer a new possibility for young people who do not find themselves suited for occupations in urban areas. It can resolve both vacancy and unemployment that cannot be resolved except across regional lines. This program also offers precious information on the mechanism for inter-regional matching of labor supply and demand.

Third, there is the "Hirosaki Second Life Project" which aims to tap the elderly as a labor resource. The outline of this project is as follows. Hirosaki city accepts the relocation of "active seniors" who are attracted to the city and are willing to help solve local problems. Then they find them jobs communicating and cooperating with locals or other groups and participate in volunteer activities within the city to solve various local problems. This project intends to build a network for this purpose.

The major characteristic of this project is that it targets U-turners and J-turners who were born in the Tsugaru region. The results of this research support this idea. It is thought to be effective for promoting migrations as it builds a living circumstance that fit both the purposes of the migrants and the needs of the city such as "communicating with different generations" and "living near sightseeing spots." Especially through the trial of providing "residence" by utilizing vacant houses is expected to resolve both the vacant house problem and promote migration.

This policy clearly expresses the target of the policy and intends to manage itself effectively. It also enumerates a plan for settlement within the region. However, the support for finding a job to support one's life is not sufficient. People who return relying on the support of their parents' home tend to earn small salaries and typically consist of youths who are dependent on parents' residence. There is the real possibility that these individuals will move outside the region again, and appropriate assistance for finding a job is essential to prevent that eventuality. One possible type of assistance is to organize a system to assist or to consult with to find a job in advance of relocation. This assistance would necessarily include helping those locals who relocated for education to find a job in local business as well as assisting people who hope to migrate to the region to find employment.

Most of the policies mentioned above target the people who have interest in moving to the region or who have trouble with the urban life. If a certain proportion of such targets actually move, it will be important to attract more such targets. In order to do this, we must grasp the actual circumstances of the people who have moved from rural regions to urban areas and assist movers from other areas to settle in rural regions.

In this article, we found that the parents' home or a "residence" is a pull factor for rural

areas. We should analyze what factors are pull factors for the high-income group for whom the existence of a residence is not a pull factor, and understand what behaves as a barrier for returning to their hometowns.

As this research focused on the migrants, it does not contain data on the people who wish to move to rural areas but are unable to do so or the people who do not wish to move to rural areas. To conduct a detailed analysis of migration choices, it is essential to include such people in future analysis.

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