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Jobless Youths and the NEET Problem in Japan

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This paper empirically examines the determinants of non-employed young Japanese people, whose number increased from the 1990s to the beginning of the 2000s. Non-working unmarried persons aged 15–34, who do not attend school, are classified into three types: 'job seekers' (type 1), who search for jobs; 'non-job seekers' (type 2), who express a desire to work but do not search for jobs, and 'non-job seekers' (type 3), who express no desire to work. Those in type 2 and type 3, non-job seekers, are defined to be 'NEET' or 'not in employment, education or training'. Multinomial logistic regression results show that young persons whose expected returns from working are low—such as females, older people, the less educated and the long-term jobless—tend to refrain from working and become non-job seekers. Moreover, there is evidence of an income effect that makes youths from wealthy families more likely to be type 3 non-job seekers. However, the number of jobless youths from lower-income households has been increasing and hence, the income effect on type 3 jobless has become less relevant recently. As a result, young, less-educated males from poor families in Japan have become more likely to lose interest in work rather than those in middle-income families.

1. Introduction

The Japanese unemployment rate was persistently low for a long period, compared with other developed countries. However, it increased following the collapse of the bubble economy in the early 1990s, and reached its highest recorded level of 5.4% in 2002. Unemployment increased particularly among youths; the unemployment rate of those aged 20–24 peaked at 12.8% in 2003, and that of those aged 25–29 and 30–34 reached 7.1% and 5.8% in 2002. During the recession of the 1990s, Japanese youth unemployment spiked since jobs for young people were slashed to protect the jobs of middle-aged and older workers in Japanese firms (Genda 2005*a*).

Paralleling the sharp increase in youthful unemployment has been a surge in the number of so-called 'freeters' (*furītā*)—young people who find employment in consecutive temporary jobs after leaving school (Kosugi 2002). The 2004 edition of the Japanese Ministry of Health, Labor and Welfare's annual *White Paper on Labor Economics*, using the survey of the Statistics Bureau, reported that the number of freeters had more than doubled to 2,170,000 in 2005 from 1,010,000 in 1992.

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While the inability of young unemployed people wanting to find regular jobs has been perceived as a serious social issue, there has also been a focus on jobless youths choosing not to work. These non-employed persons, who are neither workers nor unemployed but are classified as part of the 'non-labour force' in the employment statistics, have traditionally comprised full-time housewives, students and aged persons.

However, the number of young and unmarried non-employed persons who have given up searching for jobs has been increasing in Japan since the recession of the 1990s. Japanese policymakers, the media and researchers refer to these youths who are not in education, employment or training as 'NEETs'. The abbreviation is now well-known in Japan (Genda and Maganuma 2004; Genda, Kosugi and JILPT 2005; Kosugi 2005; Honda, Naitō and Gotō 2006).

There have been many published opinions about the NEETs in Japanese media in 2005 and 2006.[1] Some described NEETs as lazy, spoiled and undisciplined, while others emphasised that they face obstacles to employment. However, most of these opinions are just casual impressions without any empirical background or evidence. Even academic research is not well developed on these jobless youths' issues. One reason why few reliable facts have been accumulated is that most existing studies are limited to interviewing or examining a very small number of jobless youths. Most empirical studies have used data sets of no more than 100 subjects, making the reliability of their results questionable.

Nevertheless, in spite of such limitations, several researchers from the academic fields of sociology and economics have made some important discoveries. For example, Kosugi (2004) indicates that the NEETs include a relatively higher proportion of less-educated workers such as junior high school graduated and high-school dropouts; and Honda and Hotta (2006) reveal that many NEETs have no friends and are more likely to lack good communication skills. Ohta (2005) finds that the jobless rate among youths tends to be high in those areas whose proportion of low-income households has been high among the 47 prefectures. Yugami (2005), who utilises the regional analysis published by the National Census, concludes that young persons are more likely to be NEET when they live in areas where the unemployment rate is high.

In this paper, I use a rich source of reliable micro-level data in the form of the Employment Status Survey (*Shugyō Kōzō Kihon Chōsa*), which enables one to undertake a detailed investigation of jobless youths. This survey carefully examines the working and non-working situations of about 1 million persons aged 15 and over. This survey is conducted every five years by the Statistics Bureau of the Japanese government.

The government has commissioned two research projects to report on Japan's NEET, using the micro-level data from the Employment Status Survey: The Japan Institute of Labour Policy and Training organised a report entitled *A Research of Support for Youth Transition* (2005), and the Cabinet Office conducted a study called *A Research on the Working Environment for Youth* (2005). These two reports present many basic facts concerning Japan's NEETs, but they only show cross tables and do not attempt to carry out any empirical analyses. In contrast, this paper tests hypotheses from economic theory, based on empirical methods such as multinomial logistic regressions.

The analysis in this paper is organised as follows. In Section 2, I define the jobless young persons who are the focus of this paper. In Section 3, I then classify them into three types. In Section 4, I report on the numbers of jobless youths in each category according to the micro-level data. In Section 5,

1. See, for example, the magazines *Eureka* (February 2006) and *Daikōkai*, no. 58 (2006).

I describe the data and explain the empirical hypotheses based on economic theory. In Section 6, I present the empirical results, which define the characteristics of jobless youth. In Section 7, I discuss the change in income effect on non-job seekers. Finally, in Section 8, I offer some concluding remarks.

2. Data

Using the Employment Status Survey, I first determine the numbers of jobless youths and their classifications. The Research Centre for Information and Statistics of Social Science at the Institute of Economic Research at Hitotsubashi University offers micro-level data from the Employment Status Surveys of 1992, 1997 and 2002 for the purposes of academic research. The data are randomly resampled from the survey by choosing 80% of the original observations. The offered data exclude observations for households comprising nine or more members.

In this paper, I focus on people aged 15–34 who satisfy the following conditions: (a) they do not attend school (high school, university, preparatory school, professional school or vocational training school); (b) they are unmarried and (c) they typically do not do paid work. In what follows, the term 'jobless youths' refers to non-working young people who satisfy these criteria.

As a result, the numbers of observations on jobless youths are 9,254 for 1992, 11,812 for 1997 and 13,389 for 2002. Thus, for each year, the sample size is sufficient. The Employment Status Survey estimates the population by using multipliers taken from the latest National Census conducted by the Statistics Bureau of the Japanese government. The estimated number of jobless youths is further multiplied by 1.25 in this paper. This is because the available data represent 80% resampling of the original data sets.

Excluded from the definition of non-employed young are individuals who, married or otherwise, are cohabiting with another individual as a couple. The author is well aware of the formal and informal barriers faced by Japanese married women who wish to participate in the workforce, and also recognises the social, economic and moral importance of eliminating those barriers. The focus of this paper, however, is on single individuals because they may lack any kind of social connections through school, jobs and marriage. According to the Employment Status Survey, non-working housewives aged 15–34 amounted to 2,708,700 in 2002. In comparisons with plentiful studies about the choice of housewives to work in Japan (e.g. Higuchi and Iwata 1999; Nagai and Matsuda 2007), this paper especially focuses on the increasing number of jobless unmarried young persons who have never been examined in detail.

The term NEET employed herein originated in the UK. The original concept of NEET in the UK was first used in a report titled *Bridging the Gap*, produced by the government's Social Exclusion Unit in 1999. In the UK report, NEETs, which amounted to about 9%, were considered to be young persons aged 16–18 who had just graduated from compulsory education.

When the term NEET is discussed in Japan, it usually considers a wider range of age categories, such as 15–34. In the recession period of the 1990s and early 2000s, working situations rapidly and drastically worsened among young adults aged 20–34 as well as teenagers: unemployed and non-regular workers increased, while full-time regular young employees worked for longer hours. This paper studies another important aspect of what happened for this wider age range of young people, especially focusing on the borderline between unemployment and non-labour force.

3. Classification of Jobless Youths

To examine joblessness objectively, I distinguish the situations in which the jobless find themselves into three categories. These categories are based on typical job search activities and one's willingness

to work. Many jobless youths are usually willing to work and search for job opportunities or try to start their own businesses. The terminology used to describe the statistics on job search must be consistent with actual job-seeking behaviour. For example, the jobless persons ask their relatives to set up job opportunities; they register at public job centres or they pursue job advertisements in newspapers and magazines.

Those who wish to work for earnings and actually search for jobs are defined as 'job seekers' (type 1). Type 1 jobless people are typically represented as the 'unemployed' in the labour force statistics, such as those published in the Labour Force Surveys conducted by the Japanese government. Some jobless youths do not usually search for jobs, although they do want to work. In the labour force surveys, these persons are not typically included among the unemployed, but form part of the non-labour force. This is because they are not actively looking for work. To distinguish them from type 1 jobless people, these jobless people can be classified as 'non-job seekers who express a desire to work but who, for whatever reason, have stopped seeking work actively' (type 2). Besides type 2, there is another type of jobless youths who do not usually seek work: those who do not express a desire to work. They can be categorised as 'non-job seekers who, for whatever reason, have not sought work actively and who express no desire to work' (type 3).[2]

The Japanese NEETs, which is the main subject of this paper, can be defined as the sum of type 2 and type 3 jobless people, who are common in that they do not search for jobs. They are non-job seekers who have stopped seeking work and those who have never sought work. The Japanese NEETs are distinguished from job seekers, that is type 1, who are considered unemployed persons. Parsing their behaviour requires careful analysis of their expressed attitudes towards work, as well as of their activity or lack of activity in seeking work. This paper shows in the following that there are substantial differences in the reasons for jobless between the unemployed and NEETs, and even within the NEETs themselves.

4. Numbers of Jobless Youths

The estimated numbers of different types of joblessness are reported in Table 1. Job seekers numbered 636,000 in 1992, which doubled to 1,277,000 in 2002. This reflects a rapid increase in the unemployment rate of young people in Japan from the 1990s to the early 2000s.

Type 2 non-job seekers who do express a desire to work but do not look for jobs numbered 422,000 in 2002, a figure which substantially increased by 163,000 from 1992. In the context of this increase, Genda (2005*b*: Chapter 7) shows that those suffering from illness or injury increased, as did the numbers of those who could not find any kind of jobs, those unable to get good jobs and those who lost confidence in their working ability.

Most of the reasons for not seeking jobs among type 2 is 'because of illness or injury', accounting for 24.4% among all responses. Next, 'looked for a job but could not find any' totals 12.6%, 'no confidence in knowledge or skill' amounts to 9.9% and 'poor prospects of finding a desirable job' is 9.6%. On the other hand, 'housekeeping, childcare, etc.' comes to 3.2%, and 'caring for aged or sick family' is 2.2%. In addition, 11.6% of type 2 replied as 'no need to hurry in finding a job' and 26.4% did not have a clear reason for not seeking a job.

2. A complete discussion of jobless classifications examined in this paper is shown in Figure 1, which is based on the questionnaire of the Employment Status Survey. A small numbers of unknown observations exist in these jobless regarding their job search activities and willingness to work, which cannot be distinguished into three types.

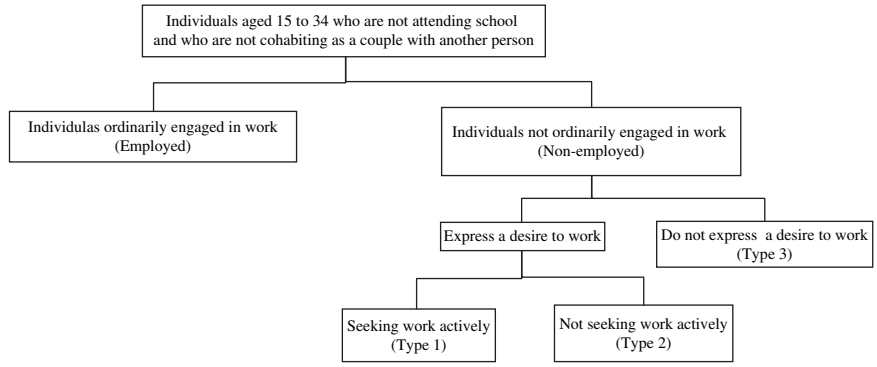

Figure 1. Classifications and Definitions of Jobless Young People.

Note: This figure is based on the questionnaire in the Employment Status Survey by the Statistics Bureau.

About 70% of the type 2 jobless people in poor health had experienced work at least once before exiting the labour force. It may be that some Japanese NEETs were injured at work or quit because of intense pressures arising from their firms shifting from seniority-based to merit-based performance assessment. Although there is no data to determine the specific type of illness or injury from which they might have suffered, the deterioration of workplace environments, including persistently long working hours for young employees, may have contributed to an increase in the number of NEETs.

Unlike those of job seekers and type 2 non-job seekers, the number of type 3 non-job seekers who do not express a desire to work has been quite stable at around 420,000–450,000 throughout the period. There is no question in the Employment Status Survey that asks why type 3 jobless persons do not want to work. Therefore, it is difficult to determine the direct reasons why they do not wish to work.

Many type 3 jobless have no work experience. For each jobless type, Genda (2005*b*: Chapter 8) illustrates the proportion with previous work experience. About 70% of type 3 jobless youths have never experienced work, while corresponding figures for types 1 and 2 are 22% and 38%, respectively. Even among the type 3 non-job seekers aged 30–34, only 37% have work experience.

5. Theoretical Hypothesis

This section and the next examine the determinants of youth joblessness. The Employment Status Survey contains many questions capable of generating explanatory variables that may affect the classification of jobless youths. Table 2 lists the variables used for estimation, and their per cent among total jobless youths in 2002. Variables representing individual characteristics that may affect the types of joblessness include age, gender, educational background and previous work experience.

An analysis of the data reveals much about jobless youth in Japan. Among the sampled jobless youths, more than 20% were aged 30 or over, and the proportion of males was higher than that of females. More than 70% were high school or junior high school graduated. About 38% had no work experience. In addition, people who resign from working become either type 2 or type 3 non-job seekers by definition. Theoretically, jobless persons whose opportunity cost of not working are low prefer to be NEETs than to look for a job. In other words, the jobless are more likely to be of type 2 or 3 if they judge their expected returns from working to be low. Such returns may comprise arnings, job stability, job satisfaction and so forth.

Table 1. Compositions of Employed and Non-Employed, Unmarried Youths Aged 15–34 Who Do Not Attend School.

Year	Observations			Estimated number (10,000 persons)		
	1992	1997	2002	1992	1997	2002
Total	102,982	105,832	90,350	1,452.6	1,547.7	1,518.1
Employed	93,728	94,020	76,961	1,320.0	1,373.9	1,304.2
Non-employed	9,254	11,812	13,389	132.5	173.9	213.9
Type 1	4,495	6,707	7,882	63.6	99.5	127.7
Type 2	1,818	2,024	2,667	25.9	29.4	42.2
Type 3	2,936	3,072	2,746	42.8	44.9	42.2

There are clearly substantial wage differentials caused by gender and education in the Japanese labour market. Other things being equal, the expected returns are lower for females and the less educated. Tachibanaki *et al.* (1998) compare the wage differential structures of several industrialised nations and study the relative importance of gender, occupation, age and industry. They find that gender plays the most important role in explaining wage differentials especially in Japan (Genda 1998: 35–71). Previous studies suggest that many Japanese females who have quitted their jobs do not look for new ones, but choose instead to leave the labour force and undertake unpaid housekeeping by becoming housewives. This kind of discouraged effect among quitted females is perceived to be one of reasons for lower unemployment rate in Japan [see, for example, Tachibanaki and Sakurai (1991: 1575–1588)]. Therefore, jobless females are less likely to be type 1 but more to be type 2 or type 3 than are jobless males.

In addition, even older jobless persons also may be more likely to become NEETs than job seekers. The total discounted present value of lifetime earnings after getting a job would be smaller for seniors, even among young people. The expected returns from working depend not only on earnings but also on job prospects. In Japan's job market, employment conditions that are consistent with the high and stable incomes generated by regular employment tend to be concentrated on young male college graduates. However, jobless people who lack work experience and have had lengthy spells of non-employment, particularly among young people, send negative signals to employers about their ability to work and their labour productivity in the job market. Employers perceive the long-term jobless as facing employment difficulties, and may hesitate to hire them. Consequently, the long-term jobless may stop searching for work.

The characteristics of households to which young persons belong may influence the type of joblessness. Total annual pre-tax household income for the past year is recorded in the data.[3] Simple economic theory can explain how income affects the decisions of joblessness; from the viewpoint of

3. The total income of a household excludes the following transient items: money from the disposing of real estate, drawings from deposits, savings and temporary income from inheritances, donations, retirement, etc.

Table 2. Independent Variables and the Percentage of Total Jobless Youths (Those Unmarried and Aged 15–34 Who Do Not Attend School in 2002).

	Observations	Per cent
Total	13,027	100.00
Age		
15–19	1,732	13.30
20–24	4,284	32.89
25–29	4,016	30.83
30–34	2,995	22.99
Sex		
Male	6,900	52.97
Female	6,127	47.03
Education		
Junior high school graduates	2,864	21.99
High-school graduates	6,544	50.23
Junior college graduates	1,909	14.65
College graduates	1,624	12.47
Unknown	86	0.66
Previous work experience		
Worked one year ago	4,246	32.59
Did not work one year ago, but have ever worked	4,066	31.21
Have never worked	4,694	36.03
Unknown	21	0.16
Annual household income (million yen)		
Less than 1	1,488	11.42
1–1.99	1,410	10.82
2–2.99	1,430	10.98
3–3.99	1,452	11.15
4–4.99	1,241	9.53
5–5.99	1,097	8.42
6–6.99	985	7.56
7–7.99	836	6.42
8–8.99	751	5.76
9–9.99	629	4.83
10–14.99	1,305	10.02
15 or over	403	3.09
Household type		
One-person household	1,412	10.84
Single-mother household	310	2.38

utility maximisation with respect to consumption and leisure, a household with high income enables its members to reduce labour supply if leisure is assumed to be a normal good. Therefore, jobless youths from high-income households abstain from job search or cannot be persuaded to work.

In contrast, members of low-income households, particularly the heads of such households, need to search for jobs if they do not work. The data classify household types and distinguish single-mother households and one-person households from others. Single-mother households are defined as those whose household heads are unmarried females who live with children aged 17 or less. Predictably, single-mother households and one-person households will work in order to live if they do not receive sufficient supports from others. The proportion of one-person households was 19.0% of all the households where type 3 jobless young people belong, and 9.1% of all the type 2 households, 10.1% of type 1 in 2002. Genda (2005*b*: 197) shows that the proportion of one-person households increased from 1992 to 2002 in type 1 and type 3 jobless persons. The single-mother households were quite rare compared with the one-person households: it is 1.9% in type 1, 2.6% in type 2 and 1.7% in type 3. In the rest of households except one-person and single-mother households, 87.2% of jobless young people lived with one or both of their parents.

6. Estimation Results of 2002

By using micro-level data from the Employment Status Survey for 2002, I use a multinomial logistic regression model to explain how jobless youths are allocated among the three types. I use this model to investigate the probability that jobless persons become non-seekers rather than job seekers. Table 3 reports the estimated marginal effects, which represent the contribution of each variable to the probability of a person being of type 2 or 3 rather than type 1. These effects are all evaluated for changes from zero to one in the corresponding dummy variables around the means of other explanatory variables.

In order to justify the usage of a multinomial logistic regression model, the assumption of independence irrelevant of alternatives (IIA) must be satisfied. Hence, by performing the Hausman specification test, I compared the above model with one that excludes the choice of being type 3 non-job seekers. Consequently, the test shows that the chi-square value is 6.34, and thus the IIA assumption cannot be rejected.

All coefficients for ages under 24 years old are negative and significant. This implies that jobless persons aged 15–23 are more likely to become type 1 than type 2 or 3. Younger persons take advantage of job opportunities better than do older persons: they search for appropriate jobs, and, as a result, they form part of the unemployed rather than the non-labour force. On the other hand, the coefficients for being aged from 31 to 35 are significantly positive for the type 3 non-job seekers who do not express a desire to work. Jobless persons aged over 30 tend to give up looking for work because they may find it difficult to get suitable jobs and expect a low return from working even if they were to get jobs.

The effect of the female dummy is positive and significant for both types 2 and 3. Jobless females are less likely to search for jobs or to want to work than are jobless males. This result is consistent with our earlier prediction, and indicates that women are discouraged from participating in the labour force in Japan.

Educational background affects the type of joblessness. Relative to high-school graduates, college graduates and junior college graduates are more likely to search for jobs rather than refrain from working. Jobless persons, who did not graduate from high school, including high-school dropouts, are more likely to be type 2 or type 3 non-job seekers than job seekers. Genda (2005*b*) shows that the proportion of junior high school graduates, including high-school dropouts, was 28.6% for jobless type 3 in 2002, while it was 23.9% for jobless type 2 and 16.0% for jobless type 1. The opportunity cost of not working is higher for educated persons.

Table 3. Marginal Effects of Multinomial Logistic Regression Model (Relative Probabilities of being Non-Seekers to Job Seeker among Jobless Youths in 2002).

Dependent variables	Type 2		Type 3	
	Marginal effect	z-value	Marginal effect	z-value
Age (25 years old)				
15	−0.1322	−4.25***	−0.0870	−4.64***
16	−0.1032	−4.48***	−0.0948	−8.39***
17	−0.1037	−4.72***	−0.1011	−9.99***
18	−0.0951	−5.60***	−0.0544	−4.24***
19	−0.0879	−5.22***	−0.0381	−2.70***
20	−0.0700	−3.92***	−0.0528	−4.07***
21	−0.0460	−2.38**	−0.0509	−3.79***
22	−0.0474	−2.50**	−0.0270	−1.75*
23	−0.0396	−2.07**	−0.0374	−2.58***
24	−0.0109	−0.53	−0.0241	−1.51
26	−0.0188	−0.92	0.0159	0.80
27	−0.0131	−0.63	0.0146	0.73
28	−0.0099	−0.46	0.0334	1.53
29	−0.0082	−0.38	0.0096	0.49
30	0.0310	1.28	0.0312	1.37
31	0.0115	−0.49	0.0569	2.30**
32	−0.0113	−0.50	0.1092	3.85***
33	0.0263	1.04	0.0929	3.32***
34	−0.0088	−0.38	0.1111	3.78***
Sex (male)				
Female	0.0478	5.94***	0.0670	10.32***
Education (high-school graduates)				
Junior high school graduates	0.0642	5.64***	0.0464	5.25***
Junior college graduates	−0.0519	−4.78***	−0.0644	−8.27***
College graduates	−0.0481	−4.14***	−0.0960	−14.14***
Unknown	−0.1236	−2.28**	0.3459	3.60***
Work experience (worked one year ago)				
Did not work one year ago, but have ever worked	0.1428	12.01***	0.1282	9.74***
Have never worked	0.1080	9.9***	0.4200	33.23***
Annual household income (6–6.99 million yen)				
Less than 1	−0.0251	−1.27	−0.0253	−1.72*
1–1.99	−0.0427	−2.48**	−0.0211	−1.52
2–2.99	−0.0337	−2.02**	−0.0282	−2.18**
3–3.99	−0.0190	−1.10	−0.0287	−2.20**

Table 3. Continued.

Dependent variables	Type 2		Type 3	
	Marginal effect	z-value	Marginal effect	z-value
4–4.99	−0.0092	−0.51	−0.0126	−0.88
5–5.99	0.0235	1.18	−0.0255	−1.82
7–7.99	−0.0080	−0.40	0.0069	0.40
8–8.99	0.0171	0.79	0.0120	0.66
9–9.99	−0.0325	−1.57	−0.0131	−0.77
10–14.99	−0.0278	−1.59	0.0114	0.71
15 or over	−0.0043	−0.17	0.0532	2.09**
One-person household	−0.0107	−0.64	0.2086	9.81***
Single-mother household	0.0024	0.10	−0.0251	−1.30
Observations	13,006			
Log likelihood	−10,360.47			
Pseudo *R*-square	0.1655			

Note: A base group is the job-seeker type. The *z*-value is asymptotic *t*-value. Those in parentheses are the reference group for corresponding dummy variables. From 130,27 observations, those whose previous work experiences are unknown are excluded in the estimation. ***,** and * indicate significance at 1%, 5% and 10% levels.

The marginal effect of previous work experience implies that jobless persons, who did not work one year ago but have worked sometime in the past, are less likely to look for jobs or are more likely to lose their desire to work, compared with those who worked one year ago. Further, jobless youths, who have never worked, continue to stop looking for work and especially become type 3 rather than type 1.

Estimated effects of household income suggest that the income effect on labour supply can partly explain why some NEETs refuse to work. The coefficient for the highest annual household income category of 15 million yen or more is significantly positive for jobless type 3. Jobless youths belonging to higher-income households tend to resign from work because they can rely on the support of parents or other family members. By contrast, jobless youths from lower-income households cannot afford leisure time. The coefficients for lower-income households are negative and several are statistically significant.

The results support the hypothesis that the theoretically predicted opportunity costs and income effects explain the distribution of jobless types. However, the estimation results for household types do not necessarily support my prediction. The coefficients for single-mother households are all insignificant. The figures for single mothers reveal no significant difference between the three jobless types, even though one would expect most of them to need jobs. In addition, one-person households tend to be classified as type 3 jobless youths. It is not clear why single-mother and one-person households do not actively seek work. However, the public support system, incorporating social security and welfare benefits, and the private support of parents, living separately from them, alleviate financial hardship.

Next, as an alternative method of estimation, I attempt to capture the probabilities of being either three type of non-employed relative to employed, using the multinomial logistic regression model. This estimation is based on Genda (2007). From the Hausman test, chi-square is negative, and the IIA assumption is also not rejected in this model.

Explanatory variables are the same, except age and annual household income. Age is categorised into 15- to 19-, 20- to 24-, 25- to 29-, and 30- to 34-year-old groups to conserve space. More importantly, as the choice of working and annual household income is mutually determined, I use household income, which excludes labour income earned by employed youth were they to get jobs, in order to avoid the endogeneity bias. In the questionnaire of the Employment Status Survey, the annual household income and the labour income are both chosen from one of the corresponding income categories. In order to compute the annual household income excluding the labour income by employed youth, therefore, I use the median of each income category. As the highest value of 15 million yen or over, 21 million yen is assumed.

The estimated marginal effects are shown in Table 4. These results also represent that jobless young people are more likely to be non-job seekers as they get older. Female youths do not tend to become type 1, but rather type 2 and type 3 if they become jobless. Higher education helps to prevent young people from becoming any type of joblessness. In addition, a lack of previous work experience can cause them also to be jobless. The marginal effects of annual household income are all positively significant, and the positive income effect on leisure can be also observed in the alternative estimation. As different significant results from the one shown in Table 3, one-person households are less likely to be type 2 and single-mother households are less to be type 3 rather than employed.

7. Declining Income Effect

When NEETs first emerged as an issue, the criticism was that they might simply be the spoiled children of rich parents who were avoiding work. The estimation results reported in the previous section suggest the presence of an income effect that leads higher annual household incomes to further discourage jobless youths from working. Indeed, some jobless youths did come from wealthy families. As Table 5 shows, more than 20% of households with type 3 jobless young people earned more than 10 million yen per year in the 1990s. However, this proportion fell from 23.0% in 1997 to 14.4% in 2002.

On the other hand, the proportions of jobless young people from poor families with an annual income of below 3 million yen continued to increase substantially between 1992 and 2002. The percentage of households with annual incomes of less than 3 million yen was relatively low among type 3 jobless in 1992. But this proportion has risen steadily during the period; by 2002, it was expected to reach almost 40%—the highest level of the three jobless types.

To examine a change in the income effect, I compare the effects of annual household income on the relative probability of youths belonging to type 2 or type 3 to type 1, among jobless youths in 1992, 1997 and 2002. Specifically, I estimate the multinomial logistic regression model whose explanatory variable is only the annual household income dummy variables, not controlling for other variables. The estimated marginal effects are shown in Table 6. The coefficient of the dummy for 15 million yen or over on type 3 is persistently significant in all three years. However, the effect decreases from 0.1042 in 1997 to 0.0665 in 2002. That coefficient of the 10–14.99 million yen dummy on type 3 is significant in 1992 and 1997, but it is insignificant in 2002. While the low-income dummy variables for 1–1.99 and 2–2.99 million yen are significantly negative among type 3 in 1992, they are insignificant or positively significant in 2002.

Table 4. Estimation Results of Multinomial Logistic Regression Model (Non-Employed Relative to Employed).

Explanatory Variables	Type 1		Type 2		Type 3	
	Marginal effect	z-value	Marginal effect	z-value	Marginal effect	z-value
Age (15–19 years old)						
20–24	0.0077	2.43**	0.0083	7.49***	0.0033	7.63***
25–29	0.0110	3.23***	0.0156	11.20***	0.0086	11.59***
30–34	0.0091	2.48***	0.0240	11.08***	0.0176	11.77***
Female	−0.0053	−3.08***	0.0025	4.88***	0.0018	7.77***
Education (high-school graduates)						
Junior high school graduates	0.0620	14.84***	0.0215	12.65***	0.0079	10.58***
Junior college graduates	−0.0246	−12.56***	−0.0090	−15.87***	−0.0048	−15.18***
College graduates	−0.0249	−12.29***	−0.0091	−16.53***	−0.0056	−16.35***
Unknown	−0.0099	−0.46	−0.0033	−0.65	0.0253	3.45***
Work experience (worked one year ago)						
Did not work one year ago, but have ever worked	0.2879	47.51***	0.1511	29.81***	0.0691	19.04***
Have never worked	0.0835	21.46***	0.1058	27.11***	0.1914	34.78***
Annual household income	0.0005	2.48**	0.0003	4.16***	0.0002	8.32***
One-person household	−0.0445	−21.78***	−0.0053	−7.73***	0.0036	7.23***
Single-mother household	0.0029	0.47	−0.0021	−1.61	−0.0017	−3.63***
Sample size	88,729					
Log likelihood	23,082.29					
Pseudo *R*-square	0.2337					

Note: The reference group is employed youths. The annual household income is the one excluding earnings by employed youths. The *,** and *** indicate significance at 10%, 5% and 1% levels.

In contrast, there are not clear changes in direction of income effect on type 2. These results suggest that the wealthy income effect appears to decline especially among type 3 jobless youths during the period. Looking at Table 6 again, the lowest income category of less than 1 million yen on type 3 is significantly positive in three years. It may combine with other influences such as age, education and household type because younger and less-educated jobless people or one-person households may be included more in the lowest income household group.

In order to examine the change in pure income effect, therefore, I estimate the same regression model shown in Table 3 for each year, controlling for individual and household characteristics. Table 7 shows the marginal effects of household income on being jobless type 3. Consequently, the figures for 2002 correspond to those in Table 3. The marginal effects of annual households earning 15 million yen or more are significantly positive for each year. The absolute values for 1992 and 1997 are 0.0964 and 0.1050, respectively, which falls to 0.0532 for 2002. Whereas annual household income of

Table 5. Proportion of Annual Household Income by Jobless Youth Type (Per cent).

	Type 1			Type 2			Type 3		
	1992	1997	2002	1992	1997	2002	1992	1997	2002
Less than 1 million yen	5.4	8.0	10.7	10.1	9.9	11.0	9.1	13.5	16.9
1–1.99 million yen	7.9	7.9	10.0	8.5	8.7	9.7	5.9	7.0	12.1
2–2.99 million yen	10.3	9.3	10.6	10.4	8.4	11.0	6.6	7.6	8.6
3–3.99 million yen	9.7	9.6	10.3	9.8	8.9	10.7	7.6	6.6	8.4
4–4.99 million yen	10.2	8.7	9.2	9.2	8.7	9.4	8.4	7.3	7.5
5–5.99 million yen	9.2	9.3	7.9	10.3	9.2	8.7	7.1	7.1	5.9
6–6.99 million yen	9.1	8.4	7.6	6.7	8.8	7.3	7.2	7.3	6.7
7–7.99 million yen	8.4	8.0	6.1	8.3	7.1	5.7	7.2	6.7	5.4
8–8.99 million yen	5.8	6.4	5.5	5.6	4.9	6.4	5.3	5.3	5.6
9–9.99 million yen	5.4	5.5	5.2	4.5	5.9	4.7	5.5	5.6	4.3
10–14.99 million yen	11.6	12.8	15.3	10.3	12.3	9.4	13.8	15.2	10.2
15 million yen or over	6.0	5.0	1.3	5.0	5.4	3.5	7.7	7.8	4.2
Unknown	0.9	1.1	2.3	1.3	1.8	2.5	8.5	2.9	4.0

Source: Cabinet Office (2005).

Table 6. Marginal Effects of Household Income (Relative Probabilities of Being Type 2 or Type 3 Based on Type 1).

Year	Type 2			Type 3		
	1992	1997	2002	1992	1997	2002
Annual household income						
Less than 1 million yen	0.0557**	−0.0071	−0.0193	0.1191***	0.2098***	0.1837***
1–1.99 million yen	0.0359	0.0218	−0.0276*	−0.0397*	−0.0054	0.1303***
2–2.99 million yen	0.0217	−0.0008	−0.0059	−0.0406*	−0.0042	0.0110
3–3.99 million yen	0.0472**	0.0069	0.0011	−0.0330	−0.0232	−0.0077
4–4.99 million yen	0.0213	−0.0022	0.0065	−0.0338	−0.0012	0.0104
5–5.99 million yen	0.0380*	0.0043	0.0273	−0.0261	−0.0127	−0.0250
7–7.99 million yen	0.0085	−0.0112	−0.0090	0.0211	−0.0084	0.0201
8–8.99 million yen	0.0208	−0.0352**	0.0127	0.0237	0.0125	0.0180
9–9.99 million yen	0.0199	0.0064	−0.0252	0.0488*	0.0275	−0.0011
10–14.99 million yen	−0.0129	−0.0241	−0.0315**	0.0969***	0.0693***	0.0104
15 million yen or over	−0.0146	−0.0185	−0.0132	0.1027***	0.1042***	0.0665**

Note: These are the estimated results of multinomial logistic regression model in each year whose explanatory variable is only the household income dummy variables. The reference is 6–6.99 million yen. Significance at 1% (***), 5% (**) and 10% (*) levels.

Table 7. Changes in Marginal Effects of Household Income on Being Type 3 (Relative Probabilities of Being Type 3 Based on Type 1).

Year	1992	1997	2002
Annual household income (6–6.99 million yen)			
Less than 1	0.0166	0.0216	−0.0253*
1–1.99	−0.0536**	−0.0427**	−0.0211
2–2.99	−0.0533**	−0.0332*	−0.0282**
3–3.99	−0.0355*	−0.0332*	−0.0287**
4–4.99	−0.0300	0.0023	−0.0126
5–5.99	−0.0256	−0.0140	−0.0255*
7–7.99	−0.0026	−0.0048	0.0069
8–8.99	0.0228	0.0239	0.0120
9–9.99	0.0302	0.0366	−0.0131
10–14.99	0.0938***	0.0756***	0.0114
15 or over	0.0964***	0.1050***	0.0532**

Note: The regression model in each year is the same as the one shown in Table 3. Significance at 1% (***), 5% (**) and 10% (*) levels.

10–15 million yen had significantly positive effects for 1992 and 1997, the effect was insignificant for 2002. These results also suggest that the positive effect of higher income on the probability of belonging to jobless type 3 diminished during the period.

At the same time, jobless youths from lower-income households became less willing to work. Table 7 reports a significantly negative income effect of 1–2 million yen for 1992 and 1997. However, the effect was insignificant for 2002. The marginal income effects of 2–3 and 3–4 million yen were negative and significant throughout the period, but the effect was gradually weakening. To confirm a decline in income effect of type 3, the regression model shown in Table 4 is also estimated for the three years. It estimates the probabilities of three types of non-employed youths relative to employed youths. The explanatory variable of annual household income excludes the labour income earned by the youths when they are employed. The estimated marginal effects of annual household income on the three jobless types, controlling other variables, are shown in Table 8.

Each figure of jobless type is commonly positive in the three years and its coefficient is statistically significant, showing that the poor family income tends to promote youths to work. Focusing on the effect on type 3, however, such positive income effect tends to decrease from 1992 to 2002, although such a continuous decline is not observed for type 1 and type 2. These results reveal that an increasing proportion of jobless youths, even those from poor households, are losing the desire to work for some reason.

Finally, I examine the differences in changing income effect by individual characteristics such as sex, education and age. Then, to control for the potential influences from public financial support and private support from family members living apart, I will now focus on the households, except for one-person households and single-mother households. In most of these households, jobless youths live with their parents. Table 9 shows marginal effects on being type 3 among jobless youths

Table 8. Marginal Effects of Annual Household Income Excluding Earnings by Employed Youths.

	1992	1997	2002
Type 1	0.0004174***	0.0004129***	0.0005014**
Type 2	0.0002397***	0.0001936***	0.0002562***
Type 3	0.0003086***	0.0003025***	0.0002227***

Note: The estimated model is the same as the one shown in Table 4.

and those distinguished by sex, education and age, using the multinomial logistic regression model whose explanatory variable is only the annual household income dummy variables.

Among total households excluding one-person and single-mother households, the marginal effects of higher income categories decrease over time, which is common in Table 6. Those effects of lower-income categories are not significant across years. Distinguished by sex, education and age, the declining influence of higher annual income on being type 3 is clearly observed for male, high-school or junior high school graduates, and those aged 15–24. On the other hand, a systematic decline in higher income effect cannot be found for female, college or junior college graduates and those aged 25–34.

For relatively poorer households with 1–5 million yen, the income effects of male and those aged 15–24 were significantly negative in 1992. Younger male jobless persons were more likely to look for jobs rather than to give up working in the 1990s. However, these negative income effects mostly disappear in 2002. Less educated and younger jobless persons, who belong to households with less than 2 million yen, are more likely to lose the desire to work rather than those in middle-income households.

8. Concluding Remarks

I have used micro-level data to examine jobless youths who are not in education, employment or training (the so-called NEETs). The NEETs are defined in Japan as jobless, unmarried youths who are not looking for work. In this analysis, I have found that basic economic theory can explain the reasons why some jobless people prefer not to work in Japan.

Jobless persons with low expected return from working, that is low opportunity cost of not working, are less likely to look for jobs. Typically, the NEETs include seniors, females, the less educated and those lacking work experience. Educational attainment has a strong effect on whether one will look for a job or want to work. In addition, female and senior jobless persons with little working experience are disadvantaged in the job market because of gender inequality and a high concentration of job opportunities among young persons, especially with high educational backgrounds.

I also found evidence of an income effect that tends to discourage youths in high-income households from wanting to work. However, the strength of this income effect is clearly declining. In particular, the income effect is weakened for males, less educated and younger jobless, and those from poor families are more likely to end up losing all hope of work and becoming NEETs as a result.

Finally, I point out several issues that need to be studied more in the future. First, the reason why youths from poor families tend to lose the desire to work should be studied in more detail. The term NEETs, originating in the UK, was—at least in part—the product of a strong hierarchical social

Table 9. Marginal Effects of Household Income on being Type 3 among Jobless Youths (Relative Probabilities of Type 3–Type 1, One-Person and Single-Mother Household Excluded).

Year	Total		
	1992	1997	2002
Less than 1 million yen	0.0275	0.0301	0.0262
1–1.99 million yen	−0.0341	−0.0090	0.0131
2–2.99 million yen	−0.0340	0.0032	0.0113
3–3.99 million yen	−0.0313	−0.0198	−0.0059
4–4.99 million yen	−0.0314	−0.0035	0.0090
5–5.99 million yen	−0.0261	−0.0145	−0.0221
7–7.99 million yen	0.0202	−0.0095	0.0179
8–8.99 million yen	0.0240	0.0113	0.0162
9–9.99 million yen	0.0489*	0.0259	−0.0013
10–14.99 million yen	0.0962***	0.0659***	0.0086
15 million yen or over	0.1022***	0.0984***	0.0608**

Year	Male			Female		
	1992	1997	2002	1992	1997	2002
Less than 1 million yen	−0.0415	0.0117	0.0233	0.0906*	0.0494	0.0284
1–1.99 million yen	−0.1033***	−0.0336	0.0250	0.0231	0.0154	0.0029
2–2.99 million yen	−0.0910***	−0.0337	0.0285	0.0104	0.0378	−0.0041
3–3.99 million yen	−0.0748**	−0.0494**	−0.0035	0.0028	0.0094	−0.0051
4–4.99 million yen	−0.0600*	−0.0277	0.0204	−0.0104	0.0188	−0.0013
5–5.99 million yen	−0.0968***	−0.0314	−0.0032	0.0262	0.0003	−0.0389*
7–7.99 million yen	0.0281	−0.0218	0.0304	0.0071	0.0022	0.0081
8–8.99 million yen	0.0802*	0.0472	0.0530*	−0.0175	−0.0194	−0.0199
9–9.99 million yen	0.0797*	0.0552*	0.0224	0.0181	−0.0065	−0.0279
10–14.99 million yen	0.1451***	0.1062***	0.0487*	0.0504	0.0260	−0.0324
15 million yen or over	0.1648***	0.1039***	0.0976**	0.0694*	0.0957***	0.0258

Year	High-school or junior high school graduates			College or junior college graduates		
	1992	1997	2002	1992	1997	2002
Less than 1 million yen	0.0289	−0.0226	0.1806***	−0.1390***	0.2866***	0.0442
1–1.99 million yen	−0.0448	−0.0383	0.1036***	−0.0707	0.0639	−0.0119
2–2.99 million yen	−0.0446*	−0.0257	−0.0127	−0.0293	0.0785	0.0397
3–3.99 million yen	−0.0358	−0.0328	−0.0280	−0.0381	−0.0168	0.0132
4–4.99 million yen	−0.0365	−0.0216	−0.0126	−0.0453	0.0523	0.0477
5–5.99 million yen	−0.0281	−0.0238	−0.0505**	−0.0124	0.0068	0.0299
7–7.99 million yen	0.0341	−0.0193	0.0104	−0.0333	0.0306	0.0426
8–8.99 million yen	0.0543*	0.0284	0.0218	−0.0373	−0.0009	0.0308
9–9.99 million yen	0.0947***	0.0351	0.0181	−0.0829**	0.0268	−0.0121
10–14.99 million yen	0.1564***	0.0986***	0.0361	0.0036	0.0587*	0.0182
15 million yen or over	0.2248***	0.1829***	0.1039***	−0.0041	0.0826*	0.0846**

Table 9. Continued.

Year	15–24 years old			25–34 years old		
	1992	1997	2002	1992	1997	2002
Less than 1 million yen	−0.0581	0.0222	0.1901***	0.1221**	0.0409	0.0215
1–1.99 million yen	−0.0875***	−0.0393	0.1026***	0.0340	0.0238	0.0043
2–2.99 million yen	−0.0605**	−0.0421*	0.0241	0.0118	0.0473	−0.0032
3–3.99 million yen	−0.0570**	−0.0517**	−0.0060	0.0135	0.0147	−0.0100
4–4.99 million yen	−0.0514*	−0.0159	0.0161	0.0067	0.0140	0.0005
5–5.99 million yen	−0.0222	−0.0330	−0.0236	−0.0253	0.0131	−0.0205
7–7.99 million yen	0.0283	−0.0158	0.0471	−0.0112	−0.0012	−0.0109
8–8.99 million yen	0.0580*	0.0216	0.0145	−0.0421	−0.0142	0.0218
9–9.99 million yen	0.0681**	0.0467	0.0302	−0.0112	−0.0159	−0.0362
10–14.99 million yen	0.1249***	0.0795***	0.0537**	0.0367	0.0322	−0.0378*
15 million yen or over	0.1427***	0.1125***	0.1317***	0.0558	0.0806**	−0.0043

Note: The results are the multinomial logistic regression model whose explanatory variable is the only household income dummy variables. Its model is the same as the one shown in Table 6. The results for type 2 are omitted in this table. Significance at 1% (***), 5% (**) and 10% (*) levels.

structure; in other words, jobless youths are not jobless simply because of the lack of a work ethic, but because of a social class or family structure over which they have no control. Similarly, young people in Japan from disadvantaged families or disadvantaged social backgrounds as well as those from underprivileged classes may be more likely to be discouraged from working. Genda (2007) finds that the expected income from working tends to fall for youths from lower-income families in Japan. Because these young people are more likely to end up in jobs with poor working conditions, they may be more likely to lose the desire to work.

Second, we need to examine the relationship between work and marriage. As this paper focuses on young persons who do not have any social connection through work, school or marriage, I did not consider housewives or househusbands, but limited my focus to unmarried persons. However, it is important to study the influence of joblessness during youth on marriage and, as a result, on childbirths. Genda and Kawakami (2006) examine the effects of working opportunities on sexual behaviour among adults aged 20–39, using micro-level data from the Japanese General Social Surveys. We found that unmarried persons tend to be sexless by losing jobs. The reason for this is because Japanese marriage partners often met as co-workers while employed at the same workplace or business. Consequently, increasing jobless young persons lose the opportunities for finding partners, thereby accelerating the decline in childbirth in Japan. This is significant for understanding the problem of Japan's declining birth rate (*shōshika mondai*).

Third, detailed analyses of increasing one-person households and single-mother households will be important in future. Among the non-job seekers who do not express a desire to work, almost 20% were one-person households. Indeed, most of the one-person households and single-mother households belong to low-income households. Nonetheless, it is still an open question as to why they cannot make their livelihood jointly with their parents and families. Moreover, it is also not clear if they will receive any support from their families while living apart or if they may have no family members in absence of public support.

If these kinds of solitary jobless young persons do not have any social relationship through family membership, they may face greater difficulties in making a living as they grow older. More empirical and reliable research is necessary still in order to understand to what extent such social exclusion is becoming a serious issue in Japan.

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