twice as large as the proportion of manual workers in their country of origin, the proportion of Latino manual workers is sixteen times larger in Japan than the proportion of manual workers in their home country. Thus, although some East Asians can keep working in professional occupations even after entering Japan, many Latinos face downward mobility from nonmanual occupations like professional, clerical and managerial positions to manual occupations. The result of career mobility among foreign residents in Kanagawa suggested that Latinos including Brazilians, Peruvians and so on are more likely to be confronted with discontinuities in career mobility than East Asians.

Next, I compare between Japanese Brazilians and Chinese migrants with regards to the effect of human capital on income attainment. Tables 2 and 3 indicate basic statistics and correlation matrix among Chinese migrants and Japanese Brazilians. First of all, we notice the divergences with respect to mean and standard deviation of education both in the sending and receiving country. Educational qualifications are higher among Chinese migrants than their counterparts, Japanese Brazilians.

Table 2 Basic Statistics and Correlation Matrix among Chinese Residents in Japan

	N	Mean	Standard Deviation	①	②	③
①*ln* Income	57	6.313	0.622			
②Education in China	57	4.035	0.865	-0.055		
③Education in Japan	57	3.316	2.300	0.464 **	-0.068	
④Period of Stay	57	8.658	4.819	0.440 **	-0.323 **	0.621 **
⑤Japanese Proficiency	57	2.737	0.518	0.147	-0.019	0.370 **
⑥Age	57	38.47	6.464	0.030	-0.051	-0.064

	④	⑤
①*ln* Income		
②Education in China		
③Education in Japan		
④Period of Stay		
⑤Japanese Proficiency	0.267 *	
⑥Age	0.343 **	0.112

+ p < .10 * p < .05 ** p < .01

And besides, mean and standard deviation of age are also different between them. Chinese respondents are on average around six years older than their Japanese Brazilian counterparts. Even though the figures for language proficiency are different as well, they seem to depend partly upon the different measurement scale as mentioned earlier. On the other hand, there is actually a resemblance with respect to the period of stay between them.

Both Japanese Brazilians and Chinese respondents have on average lived in Japan for roughly eight years.

Before going to the result of the regression

Table 3 Basic Statistics and Correlation Matrix among Japanese Brazilians

	N	Mean	Standard Deviation	①		②		③	
①*ln* Income	219	5.908	0.245						
②Education in Brazil	201	1.751	0.786	0.140	*				
③Education in Japan	215	0.121	0.551	-0.024		-0.045			
④Period of Stay	217	7.899	4.974	0.073		-0.054		0.154	+
⑤Japanese Proficiency	218	0.468	0.500	0.145	*	-0.039		0.017	
⑥Age	212	32.547	9.495	-0.015		-0.008		0.052	
⑦Work Hours per Week	221	53.199	11.101	0.208	**	0.086		0.011	
⑧Frequencies of Job Shift	197	2.274	2.670	0.054		0.020		0.175	**
⑨Employment Status	221	0.104	0.306	0.095	+	-0.085		0.253	**

	④		⑤		⑥		⑦		⑧	
①*ln* Income										
②Education in Brazil										
③Education in Japan										
④Period of Stay										
⑤Japanese Proficiency	0.278	**								
⑥Age	0.452	**	0.201	**						
⑦Work Hours per Week	0.024		-0.007		0.001					
⑧Frequencies of Job Shift	0.304	**	0.256	**	0.056		-0.027			
⑨Employment Status	0.058		0.127	*	0.052		0.021		0.162	*

+ $p < .10$ * $p < .05$ ** $p < .01$

Note: Basic statistics and correlation coefficients are calculated to use a pairwise deletion method because each regressed equation model actually has different numbers of samples due to employing a listwise deletion procedure.

analysis, we take a look at peason's correlation coefficients between variables. First, when we see the matrix of correlations among Chinese respondents, we notice significant positive correlations between income earnings and other variables such as education in Japan and period of stay. As Chinese migrants went on to higher educational levels and stayed in Japan for a longer time, they are more likely to have higher income earnings. When we pay attention to relations between independent variables, we find some significant correlations. Especially, the peason's coefficient between education in Japan and period of stay is the highest of all. Since it exceeds 0.6, I can't simultaneously examine the impact of two variables on income earnings in the regression analysis, due to the possibility of multicollinearity. Therefore, their effect on income has to be estimated in each separate model.

Second, when we take a look at the result of correlations among Japanese Brazilians, there are three positive significant relations between income and variables related to human capital

such as education in Brazil and Japanese language proficiency. If we pay attention to the difference of coefficients between Japanese Brazilians and Chinese migrants, we find that these coefficients among Brazilians are greatly lower than their Chinese counterparts. This means that the degree of correlation between human capital and income earnings among Brazilians is weaker than their Chinese counterparts. When we take another look at correlations between independent variables, the coefficient between period of stay and age is the greatest of all (0.452). In addition, although correlations between education in Japan and period of stay in Japan are significant among Japanese Brazilians as well, the figure among Brazilians is much lower than their Chinese counterparts. It seems that we don't have to be as worried about the possibility of multicollinearity among Japanese Brazilians as with Chinese migrants.

Among Japanese Brazilians, I construct five equation models in the regression analyses in order to compare them with Chinese migrants. In the first two models, the main effects of education in Japan and period of stay on income earnings are estimated separately without controlling for the correlation between them. Finally, in the last three equation models, the effects of two variables on income level are examined altogether.

Table 4 Multiple Regressions predicting ln income among Chinese residents in Japan

	Model 1		Model 2	
	B	β	B	β
Constant	5.827 **	----	5.877 **	----
Education in China	-0.014	-0.020	0.075	0.104
Education in Japan	0.130 **	0.481	----	----
Period of Stay	----	----	0.067 **	0.516
Japanese Proficiency	-0.046	-0.038	0.033	0.028
Age	0.006	0.064	-0.014	-0.144
N	57		57	
F-value	3.674 *		3.684 *	
ADJ-R2	0.160		0.161	

+ p < .10 * p < .05 ** p < .01

Tables 4 and 5 indicate the result of multiple regressions predicting natural logarithm of income among Chinese migrants and Japanese Brazilians. When we see the results for Chinese migrants, we notice that educational qualifications in Japan and period of stay in Japan have significant impacts on income earnings, even though these equations can't control the correlation between educational levels and years of stay. Almost similar tendencies between peason's correlation and multiple regression analysis are clarified with regards to the relationship between income and other human capital variables. As Chinese went onto higher educational levels and lived in Japan for a longer period, they are more likely to

earn more income.

Next, we take a look at the coefficients of regressed equations among Japanese Brazilians. Despite the significant correlations between income, education in Brazil and language proficiency, Model 1 suggested that only Japanese proficiency has the significant impact on raising their income level. This means that as Brazilians speak better Japanese, they are likely to earn more money. Moreover, when I add up the period of stay in Japan to the models, the relevant effect of language skills is lost both in model 2 and 3. Even in model 3, income earnings are not dependent on any human capital acquisitions.

Table 5 Multiple Regressions predicting ln income among Japanese Brazilians

	Model 1		Model 2		Model 3	
	B	β	B	β	B	β
Constant	5.85 **	----	5.852 **	----	5.851 **	----
Education in Brazil	0.031	0.101	0.033	0.108	0.032	0.107
Education in Japan	-0.017	-0.033	----	----	-0.022	-0.043
Period of Stay	----	----	0.004	0.092	0.005	0.098
Japanese Proficiency	0.069 +	0.143	0.059	0.123	0.059	0.122
Age	-0.001	-0.042	-0.002	-0.087	-0.002	-0.084
N	194		194		194	
F-value	1.51		1.761		1.473	
ADJ-R2	0.01		0.016		0.012	

Table 5 (Continued)

	Model 4		Model 5	
	B	β	B	β
Constant	5.850 **	----	5.849 **	----
Education in Brazil	0.046 *	0.153	0.038	0.126
Education in Japan	-0.022	-0.043	-0.036	-0.074
Period of Stay	0.003	0.073	0.002	0.046
Japanese Proficiency	0.053	0.110	0.040	0.083
Age	-0.002	-0.092	-0.003	-0.107
N	179		Work Hours per Week 0.004 *	0.206
F-value	1.585		Frequencies of Job Shift 0.003	0.026
ADJ-R2	0.016		Employment Status 0.105 +	0.134
			N 159	
			F-value 2.043 *	
			ADJ-R2 0.050	

+ p < .10 * p < .05 ** p < .01

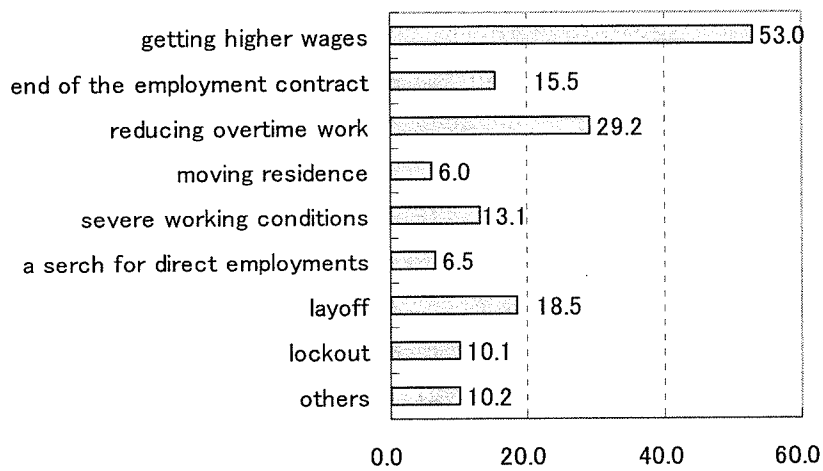
Note: The respondents who work for less than 20 hours per week are excluded out of the dataset in Model 4 and 5.

What is supposed as one of the reasons for the statistical results mentioned above is that inclusion of respondents who work for a very short time per week into the dataset might

prevent us from finding the actual causal relationship between human capital and income. Therefore, I have decided to exclude in model 4 respondents who work for less than twenty hours per week from the dataset. Model 4 clarified the income dependence on education in Brazil. It represents that Brazilians of Japanese descent with higher educational credentials in Brazil are more likely to obtain higher income levels.

When we compare between Brazilians and Chinese with regards to the degree of dependence of income earnings on human capital, adjusted coefficients of determination (R^2_{adj}) show that the total impact of human capital among Japanese Brazilians is absolutely weaker than their Chinese counterparts. A coefficient of determination among Brazilians is around 0.015 in any model while it is roughly 0.16 among Chinese. Thus, the income level of Chinese is roughly ten times more dependent on human capital than their Brazilian counterparts. In other words, it would be quite difficult for Japanese Brazilians to raise their income level compared with professional Chinese migrants, even if they got higher educational credentials, stay in Japan for a longer period and can speak Japanese better.

Figure 3 The reason of job shift (N=151)



Note: This question is answered by the respondents who have changed their jobs in Japan.

What factors instead of human capital then condition the salary among Brazilians with Japanese ancestry? What I suppose is that factors related to conditions of labor market to which Japanese Brazilians belong might be important in determining their income level. Therefore, in model 5, work hours per week, frequencies of job shifts and employment status are added up into a regression equation for the following reasons.

First, work hours per week are supposed to represent labor demand in a company where respondents work. What it means is that income earnings among Brazilians would be

much dependent upon labor demand conditions since many of them are subcontract workers. Second, it seems that Japanese Brazilians would change their job in order to attain a higher salary. Actually, Figure 3 which represents the results of the Brazilian Survey with regards to reasons of job shifts shows that 53 percent of respondents who have changed jobs in Japan aim to get higher wages.

Third, I think that their income levels might be lowered by the situation of the labor market specific to subcontract workers. Subcontract workers form a part of the flexible labor forces in the manufacturing industry. Many Brazilians are employed on short-term contracts by job brokers who, in turn, send them to their actual workplaces in subcontractor's factories (Yamanaka 2000). Therefore, companies can easily fire subcontract workers as soon as the demand for factory products declines, and they don't have to employ surplus labor. In a sense, Brazilians function as a shock absorber of labor supply between economic booms and recessions. I suppose that the status of subcontract workers leads consequentially to lowering the income level. It might be required to change labor market sectors from subcontract work into standard employment or self-employment so that workers can increase their earnings.

Table 6 Multiple regressions predicting work hours per week

	Model 6	
	B	β
Constant	52.197 **	----
Education in Brazil	1.048	0.075
Education in Japan	-0.168	-0.007
Period of Stay	0.037	0.017
Japanese Proficiency	-0.398	-0.018
Age	-0.032	-0.027
N	181	
F-value	0.236 +	
ADJ-R2	-0.022	

Table 7 Logistic coefficients predicting employment status

	Model 7
	B
Constant	-2.522 **
Education in Brazil	-0.467
Education in Japan	0.469
Period of Stay	-0.018
Japanese Proficiency	0.677
Age	0.025
N	181
-2LL	115.151
$\chi 2$	6.435
Nagelkerke R2	-0.022

Model 5 in Table 5 suggests that two variables such as work hours per week and employment status have the significant effect on raising income earnings, even though the impact of education in Brazil has been lost. It demonstrates that the degree of labor demand in a company and labor market sector actually have greater impact on determining the earnings of Japanese Brazilians than human capital acquisitions. On the other hand, frequencies of job shift have no impact on increasing their earnings. Although Brazilians of Japanese descent have changed the job broker which they belong to, their income level has not improved at all as they had expected.

While we found the labor demand and labor market sector to be important among Japanese Brazilians in Model 5, it is probable that human

capital might indirectly have an impact on income via these variables. I hypothesize that human capital accumulations would eventually result in more likelihood of working longer hours, and becoming a full-time employee or self-employed.

I observe in Tables 6 and 7 whether human capital would enable Brazilians to increase work hours per week and to move toward self-employment or standard employment. Both Tables 6 and 7 indicate that human capital acquisitions have no significant impact on increasing work hours and growing likelihood of leaving the subcontracting work . With regards to work hours, I interpret that income earnings among Brazilians would depend largely upon labor demand in the factories where they are actually sent, regardless of human capital. The findings with respect to employment status imply that labor market sector would to some extent determine income among Japanese Brazilians though social capital which are not examined in this research might raise their earnings and increase the probability of exit from subcontracting working situation. Even if Brazilians attain higher educational qualifications and improve their language fluency, it would be difficult to attain larger earnings without going out of a kind of external and flexible labor market sector.

7. Discussion

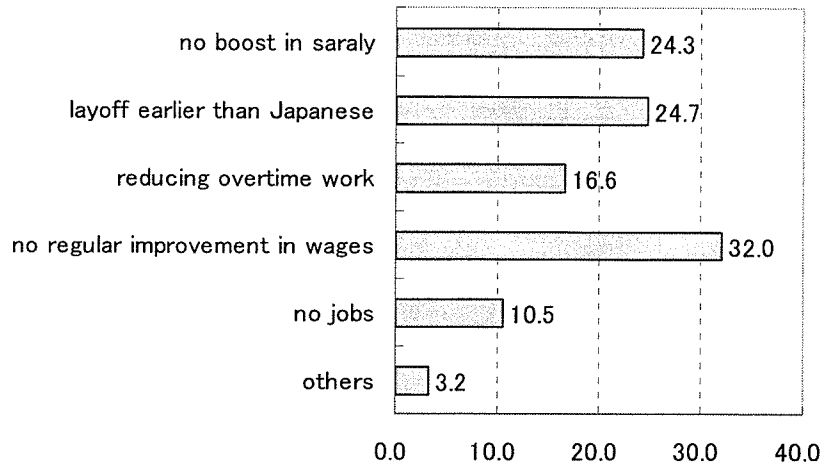
This research attempted to compare between Japanese Brazilians and Chinese migrants with regards to how effective human capital is to raise their income level. The findings imply that income earnings among Japanese Brazilians are less dependent on human capital than their Chinese counterparts. Although we observed the significant relationship between them in two of the four regression models among Brazilians of Japanese descent, I note not only that adjusted coefficients of determination are very weak, but that these regressed equations do not significantly explain the variance of income. Therefore, Japanese Brazilians are thought to face difficulties in raising their income level even if they accumulate more human capital compared with Chinese migrants.

Hence, I paid attention to labor market situations where Brazilian respondents belong, in order to search for the factors which significantly explain income earnings instead of human capital. Implications of the findings are twofold. First, income levels among Brazilians are largely dependent upon labor demand in factories for subcontract workers. No characteristics of Brazilian labor supply such as human capital and job shift behaviors have contributed to improvements in their earnings. In that sense, I pronounce that labor demand actually conditions work outcomes among Brazilians more largely than features of labor supply.

Second, we have observed a weak but significant impact on upgrading income levels of exit from labor market for subcontract workers. Thus, as long as Brazilians with Japanese descent continue to stay in this flexible labor market sector, it would be very difficult for them to increase their income earnings. Moreover, even if they often changed jobs, they really remained in lower pay. As Figure 4 actually clarifies, roughly thirty percent of Brazilian

respondents experience troubles such as 'no regular improvements in wages' and a quarter of them complain that there is 'no boost in salary.' Hence, Brazilian respondents also have a subjective sense of a difficulty in increasing their income level. Since we observed a significant wage gap between subcontract workers and regularly employed and self-employed workers in spite of controlling for human capital and work hours per week, I suppose that labor market sectors for subcontract workers would prevent Brazilian migrants from improving their earnings.

Figure 4 Trouble with a current job (N=247)



As argued above, subcontract workers have to change workplaces more often through the job broker because subcontractor's companies can easily fire them in terms of labor contracts as soon as the demand of factory products and labor demand actually declines. They are not expected to continue to work for a relatively long period and to accumulate human capital, so they are actually involved in unskilled jobs which require no job training and it would eventually be difficult for Brazilians to increase their income. On the other hand, regular employees, in particular among men, have been expected to continue working for a long period and to improve skill levels through on-the-job training. Therefore, I suppose that transition from indirect to direct employment would enable even Brazilians to have some opportunities to get skilled.

Moreover, entry into self-employment gives Brazilians a chance to get more earnings, even though there are quite a small number of respondents who are now involved in self-employment.[14] A population census in 1995 actually showed that less than one percent of Brazilian nationals in Japan were in self-employment (Kajita et al. 2005). Whereas ethnic entrepreneurs didn't thus prevail among Japanese Brazilians, transition from indirect employment to self-employment could also

result in raising economic outcomes.

This research has tried to compare between Japanese Brazilians and Chinese migrants with respects to the determinants of earnings. According to the findings in this research, we could not observe the results presupposed by theory of human capital. How effective human capital is for raising income level depends largely upon the type of immigrants like professional migrants and labor migrants in Japan. In that sense, these two immigrant groups are thought to form different segmentations in the Japanese labor market.[15]

This research has some defects with regards to representative features of samples. The survey on Chinese migrants adopted non-random sampling procedure. The Brazilian Survey restricted the sampling area to a district of a specific local government. Future research will have to collect nation-wide representative samples if possible.

Moreover, the model which this research employed is restricted to the simple causal relationships between human capital, labor market situations and income earnings. For example, Higuchi and Tanno (2003) argued that employment status and work period in a company among Brazilian migrants greatly differed by firm size. According to their research survey which targeted manufacturing companies in Toyota city in 2000, small and medium-sized firms are more likely to regard foreign migrant workers as a substitute of Japanese regular working staffs, while large-sized companies tend to employ them as temporary workers. During the economic recession in the 1990s, while large-sized companies attracted Japanese female and aged part-time workers, small sized companies suffered from labor shortage even in the period of less labor demand. Therefore, future research should consider whether work outcomes are influenced by firm size and work period in a company when analyzing incorporation of Japanese Brazilians into the Japanese labor market.

NOTES

[1] An earlier version of this paper was presented at a conference of the Research Committee on Social Stratification of the International Sociological Association, held in Los Angeles, CA, U.S., from 18th until 21st August, 2005. This research was supported by grants from the Ministry of Health, Labour and Welfare and grants for young scholars from Shizuoka University.

[2] Portes et al. (1996: 14-25) classified transnational migrants into four types of migrants, which consist of labor migrants, professional migrants, entrepreneurs and refugees.

[3] See Araragi (2000) with regards to adaptation toward Japanese society, housing, educational attainment, incorporation into labor market, and others, among Chinese of Japanese ancestry.

[4] See Kajita (2002), and Tsuda and Cornelius (2004) with regards to recent trends in the immigration policy.

[5] Some empirical results have supported differential returns on human capital between immigrant groups or between foreign born and native born (Reimers 1984, 1985).

[6] Takenoshita (2005b) examined differential rates of return on human capital between Japanese Brazilian migrants and native Japanese.

[7] This research was conducted in collaboration with Liu Xiaodan (Keio University) and Mioko Tsuboya (Yokohama City University).

[8] We asked the following associations to help us hand out our questionnaire. These are: an association organized by mothers with regards to education and child care, an association which consists of Chinese employees who work for companies in Japan, an association which consists of permanent residents who came from

China, an organization for Chinese university students, three private tutoring schools for Chinese students and so on.

[9] See Takenoshita (2003, 2005a) for detailed information on this research of Chinese migrants in Japan

[10] Variables which are analyzed in this research were also measured for the spouse of the respondent if any. Therefore, if spouses of female respondents are Chinese and have an occupation, they were added to the samples of the dataset. If the respondents or their spouses engage in manual occupation, they were excluded from the dataset because I especially focus on Chinese migrants who have non-manual occupations.

[11] Kanagawa Survey has no information on detailed distinctions regarding country of origin. Therefore, I just used the data on respondent's occupation by region of origin. While Chinese and Brazilians make up a significant part of the Latino and East Asian population, these classifications might not be comparable in a strict sense.

[12] The comparative analysis of career mobility between transnational migrants is based on the findings of Takenoshita (2005).

[13] Indices of dissimilarity between jobs in the sending country and current jobs can be interpreted as an index of structural mobility in the transnational migration.

[14] Higuchi and Takahashi (1998) actually reported that they observed six companies, whose annual turnover was more than one hundred thousand million yen, among the 77 Brazilian entrepreneurs they interviewed. In that sense, the success of self-employment among immigrants would result in the economic upward mobility in the host society.

[15] This comparative analysis is restricted to male respondents due to the small numbers of female respondents in the survey on Chinese migrants. On the other hand, Takenoshita (2005b) focuses on the differential rates of return on human capital among both male and female Japanese Brazilian migrants, compared with the native Japanese population.

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Foreign Workers and Health Insurance in Japan: The Case of Japanese Brazilians

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Abstract

This is a preliminary analysis of a 2004 survey of Japanese Brazilians conducted by Iwata City in Shizuoka Prefecture. According to the survey results, only 28.3% of Japanese Brazilians are covered by any health insurance. Among them a little more than 30% are covered by the Employer's (Health) Insurance (Shakai Hoken) while only a little more than 40% by the National Health Insurance (Kokumin Kenko Hoken) and a little more than 20% by other types of health insurance. This analysis has revealed that the coverage and type of health insurance affect medical care (health-seeking) behaviors of Japanese Brazilians when they get sick or injured. It has also found that the ability to collect information and to communicate, including fluency in Japanese language, and the necessity for health and medical services (particularly among those with infants and young children) also affect health insurance coverage and medical care behaviors. As previous studies found, this analysis has found that the type of employment (direct or indirect) affects the coverage and type of health insurance, and that the characteristics related to the employment type, including monthly income, housing, work hours, number of job changes, may also affect the ability to collect information and to communicate, and the necessity for health and medical services. Japan's social integration policy for international migrants, including health insurance, medical care and language-teaching programs, should strengthen the linkage between international migration policy and social security policy.

Key Words: Japanese Brazilians, international migrants, health insurance, medical care

1. Introduction

In Japan, many foreign workers are not covered by health insurance. Most undocumented foreign workers are not covered by the Japanese health insurance program due to their residence status. Even documented foreign workers are not necessarily covered partly because their contribution is collected together with the contribution to the Japanese old-age insurance program, which requires at least a 25-year payment for entitlement to receive pension. The maximum amount of reimbursement when they opt out at the time of returning home is only up to three years' contribution. Foreign workers

who expect to stay in Japan for more than 3 years are likely to lose additional returns on their contribution unless they come back to stay and contribute for 25 years in total.

Thus, many foreign workers have an incentive to avoid the contribution to the Japanese old-age insurance program. In doing so, they must unwillingly avoid the contribution to the Japanese health insurance program. Many foreign workers are not covered by health insurance also because their Japanese employers naturally have an incentive to avoid making a matching contribution for their workers in order to cut labor costs. They can also avoid the matching contribution if the contract of employment is for less than two months, which has increased the number of Japanese and foreign workers on a short-term contract of less than two months. Among foreign workers, Japanese Brazilians are often working on a short-term contract because they are often employed indirectly by subcontracting / outsourcing companies which subcontract workers for work done at a factory on a weekly or monthly basis, instead of being employed directly by the factory or the company owning it. Consequently, many Japanese Brazilians cannot join the Employer's Insurance (Shakai Hoken) Program.

Some subcontracting companies encourage their workers to join the National Health Insurance (Kokumin Kenko Hoken) Program. However, the National Health Insurance Program, which is a municipality-based program and primarily for the self-employed and the non-employed, also requires those covered to pay contributions to the National Pension (Kokumin Nenkin) Program. In addition, the contributions are usually higher than for the Employer's Insurance Program because there is no matching contribution from the employers even though it is subsidized by tax revenue. Due to the Program's deficits, some local municipalities do not permit employees of subcontracting companies (often Japanese Brazilians among foreign workers) to join the Program because they are virtually employed continuously for more than two months by the same company and are supposed to join the Employer's Insurance Program.

A new law to allow the dispatch of non-specialized workers (including factory workers) was implemented in 2004, which may shift some factory workers from subcontracting/outsourcing companies (wherein the subcontracting company manages its workers at the factory) to dispatching companies (wherein the factory manages the workers) and which may also increase the number of workers on a short-term contract. However, its effect on foreign workers is not clear because language and other skills are required to manage them. In any case, there may be no change to the tendency of employers

to avoid the matching contribution to the Employer's Insurance Program.

Private medical insurance in Japan only supplements the parts not covered by the patient's Japanese health insurance programs and cannot be used as an alternative. Some short-term foreign workers are enrolled in a travel insurance policy at home or in Japan, but many of them end up being uninsured, putting them at greater health risk. Another problem with the travel insurance is that it does not cover the whole family and the children can be exposed to an even greater health risk.

However, it is not easy to make special legal arrangements for foreign workers under the principle of equality among nationalities. If the Japanese Government tries to enforce contributions from foreign workers and their employers, it may increase underground work even by documented foreign workers, particularly Japanese Brazilians who have a special residence status to stay and work in Japan without any qualification requirements or time limit since the 1989 revision of the immigration control law. Thus, not only the immigration control law, but the labor law should also be coordinated with the social security law to increase the coverage of foreign workers by the health insurance and possibly the old-age and labor accident insurances.

According to the results of a survey conducted by Iwata City in 2004, only 28.3% of Japanese Brazilians are covered by any health insurance. Among them a little more than 30% are covered by the Employer's (Health) Insurance while only a little more than 40% by the National Health Insurance and a little more than 20% by other types of health insurance. Major problems regarding the medical care of foreigners are broken down into the following two by Ikegami (2002): 1) burden of medical care costs due to non-coverage by health insurance; and 2) communication gap at medical care facilities due to lack of Japanese language fluency.

This study examines the determinants of health insurance coverage, medical care behaviors and troubles with medical care facilities, drawing on micro-data from the 2004 survey of Japanese Brazilians in Iwata City. It tries to derive implications for possible measures to help foreign workers get Japanese health insurance coverage and maintain a healthy life, with a focus on Japanese Brazilians. It also seeks to explore the ways to modify and coordinate immigration control, labor and social security laws without distorting the equality among workers of different nationalities and without endangering the health of foreign workers staying in Japan. This is particularly important for Japanese Brazilians because many of them are likely to stay in Japan more or less permanently.

The present author has been

interested in the social integration of international migrants and has conducted both theoretical research (e.g., Kojima 1993) and empirical research (e.g., Kojima 2003, 2005b). This is an extension of Kojima (2005a), which shares with Kojima (2005b) the author's interest in the relationship between migration and health.

2. Literature Review

There are not too many Japanese empirical studies on the health insurance coverage of foreigners and on health behaviors, while there is an increasing number of studies on these topics in the US and Europe (e.g., LeClere et al. 1994, Ku and Matani 2001, Yu et al. 2004, Prentice et al. 2005, *Migrations: Études* 2002, 2004) due to their policy-oriented interests. The relative lack of Japanese empirical studies is partly due to the limited availability of both micro- and macro-data, particularly those collected for administrative purposes in Japan, and partly due to the limited interests of Japanese scholars studying international migrants. Fukawa (1997) may be the only study showing macro-data for the health insurance coverage of Japanese Brazilians at the prefecture level, which showed a relatively low coverage by the National Health Insurance and the variation among local municipalities. Hochi et al. (1992) may be the first survey-based work on the health and health-related behaviors of Japanese South Americans including Brazilians. Hayashi and Ikegami (1998) drew policy implications from the results of a survey of participants in a medical NGO's free health examination. Unfortunately, these Japanese surveys tend to be too small in scale or tend to use samples too selected for statistical analysis. However, the 2004 Iwata survey had about 500 usable cases, which Kojima (2005a) has conducted a preliminary analysis on health insurance coverage, medical care behaviors and attitudes, while Chitose (2005) and Takenoshita (2005a, 2005b, 2006) analyzed them from a different focus (children and income).

No hypotheses are constructed in advance due to the lack of past empirical studies in Japan. However, this study will broadly draw on the analytical frameworks presented by the (U.S.) Institute of Medicine (2001: Fig. A.1, 2.2; 2003: Fig. 1.1, 1.2) for the interpretation of the results. This is still a preliminary study in this sense.

3. Data and Method

Iwata City is located near the western end of Shizuoka Prefecture (near the center of the main island along the Pacific coast), next to the major industrial center of Hamamatsu City and not too far from Toyota City in the eastern part of Aichi Prefecture (capital city: Nagoya). Iwata is also an industrial city itself with manufacturers of machinery including those related to automobiles and motorcycles. It has a population of

almost 170,000, of which almost 5% are registered foreigners after the integration of the city with surrounding towns on April 1, 2005. The percentage of foreigners was about 6% at the time the survey was conducted between August and October 2004 even though the total population was nearly one half the current population. More than three quarters of registered foreigners are Brazilians (mostly those of Japanese descent and their family members).

In terms of absolute number, Iwata City had 6,597 registered Brazilians as of June 30, 2005. But the city proper had 3,713 as of March 31, 2004, which is one year before the integration with surrounding towns. The number of Brazilians in 2004 has almost doubled from 1997 (1,875) and has grown by 50% from 2001 (2,566). The proportion of foreigners to the entire population has grown steadily from 0.9% in 1991, 2.0% in 1994, 3.6% in 2000 to 5.3% in 2004. It has declined a little to 4.9% in 2005 after the integration. In terms of percentages among households, however, those headed by foreigners represent 8.2% in 2005.

This study draws on micro-data from the sample survey of Japanese Brazilians conducted by Iwata City in 2004. According to the survey report (Iwata City 2005), the aim of the survey was to collect basic information for the improvement of measures for foreign citizens and to promote multicultural cohesion in its policy planning. The subjects were South Americans (mostly Brazilians of Japanese descent) aged 18 and above living in the city (with usable questionnaires for 497 respondents). The questionnaires in Portuguese were distributed, and the self-enumerated ones were collected between August and October 2004. The items questioned included demographics, work, housing, health insurance and medical care, living conditions and attitudes, language learning, children's education and future plans.

This analysis has applied, to the 2004 Iwata survey data, the binomial logit model with stepwise selection of independent variables constructed from answers to related questions as well as demographic, socioeconomic and cultural characteristics. It has used the SAS/LOGISTIC procedure. The frequency distribution of dependent variables is presented in Appendix 1 and that of independent variables in Appendix 2.

3. Results

1. Health Insurance Coverage

Table 1 shows the results of the logit model with stepwise selection for determinants of health insurance coverage, type of insurance and reason for non-coverage. The analysis is based on the response to Question 21 which is as follows:

Q21. Are you covered by any type of health insurance?

1) Covered (Circle one that is applicable)

A. Notional Health Insurance (Kokumin Kenko Hoken)

B. Employer's Insurance (Shakai Hoken)

C. Travel Insurance

D. Others ( )

2) Not covered (Circle all that are applicable) (M.A.)

A. The employer refuses to cover.

B. It is too costly.

C. It is difficult to understand the Japanese insurance system.

D. I plan to return home soon.

E. Others ( )

The last two types of insurance (travel insurance and others) are collapsed into one category, "others" because of the low frequency of each. The first column in the upper panel shows the determinants selected for health insurance coverage. Among Japanese Brazilians, those aged 25-29 or 45+, those with two children, those who first arrived in 1991-92, those who first arrived to visit relatives, those fluent in Japanese and those wishing to study Japanese are more likely to be covered by health insurance. But those employed indirectly, those who never changed jobs or changed jobs once, those living in housing contracted by the employer and those uncertain about obtaining Japanese nationality are less likely to be covered by health insurance.

As mentioned qualitatively in previous studies, indirect employment has a negative effect on health insurance coverage. Japanese Brazilians who speak Japanese fluently seem to be in a better position to negotiate with the employer for coverage. Those with two children should have greater needs for health insurance coverage to insure their children, particularly when they are small.

When we look more closely at the factors affecting whether the respondent is covered by each kind of health insurance in the following three columns in the upper panel, the following points become clearer. As for the determinants selected for coverage by the National Health Insurance (Kokumin Kenko Hoken) in the second column, single Japanese Brazilians, those who first arrived in 2003-2004, those living in a private apartment or public housing, and those with Japanese-speaking children are more likely to be covered. Those employed indirectly are less likely to be covered, which may be less readily understandable than if covered by the Employer's Insurance (Shakai Hoken). Perhaps it implies that those directly employed are more likely to be covered by the National Health Insurance even if they could not be covered by the Employer's Insurance.

The third column shows the determinants selected for coverage by the Employer's Insurance. Japanese Brazilians with children aged 0-2, those living in Iwata for 3 years, those

employed directly, those who joined the community association (Chonai-kai), and those fluent in Japanese are more likely to be covered, while single Japanese Brazilians and those contacting Japanese for consultation are less likely. As expected, those employed directly, those fluent in Japanese and those with greater needs are more likely to be covered by the Employer's Insurance.

The fourth column presents the determinants selected for coverage by other types of insurance, including travel insurance. Japanese Brazilians with children aged 15+, those who first arrived in 1991-92, those working for 11 hours or more per day, and those living in company dormitory or apartment are more likely to be covered, while those living with children are less likely. This seems to imply that older Japanese Brazilians who came to Japan alone are more likely to be covered by other types of insurance.

The lower panel of Table 1 shows the results for reasons of non-coverage among Japanese Brazilians who are not covered by any type of health insurance. The first column presents the determinants selected for refusal by the employer as a reason for non-coverage. Japanese Brazilians employed indirectly, those working for 9-10 hours per day, and those sending their children to a Brazilian childcare center are more likely to be not covered by health insurance due to the refusal by the employer, possibly because they have less negotiation power. Single Japanese Brazilians are less likely to be not covered for this reason, probably because they are more likely to be covered by the National Health Insurance as shown by the second column in the upper panel.

The second column in the lower panel shows the determinants selected for high cost as a reason for non-coverage. Japanese Brazilians who first arrived in 1995-96 or 2001-2002, those contacting Japanese for consultation or those who have never contacted them, those for whom Brazilian papers are their information source, and those sending their children to a Brazilian school are more likely to be not covered by health insurance due to the high cost, possibly because they are more interested in saving money for their life in Brazil. Japanese Brazilians wishing to study Japanese are less likely to be not covered for the cost reason, probably because they are more likely to be covered by whatever health insurance as shown by the first column in the upper panel.

The third column presents the determinants selected for difficulty to understand the Japanese insurance system as a reason for non-coverage. Japanese Brazilians with children aged 15-17 are more likely to be not covered for this reason possibly because their children who have not received Japanese education cannot help their parents understand the

system. Japanese Brazilians living in public housing, those fluent in Japanese, and those not planning to obtain Japanese nationality are less likely to be not covered for this reason probably because the first two groups are more likely to be covered by one of the two major insurances as shown in the upper panel.

The last column presents the determinants selected for plan to return soon as a reason for non-coverage. Japanese Brazilians aged 40-44, those who first arrived at ages 15-19, those living in Iwata for one year, those without job changes, those for whom Brazilian papers are their information source, and those sending their children to a Brazilian school are more likely to be not covered for this reason possibly because many of them are new-comers migrating to Japan just to work for a short period. Japanese Brazilians living with children are less likely to be not covered for this reason possibly because they are covered by the National Health Insurance or the Employer's Insurance or they are not covered for other reasons as shown by the rest of Table 1.

2. Medical Care Behaviors

Table 2 shows the results of the logit model with stepwise selection for determinants of medical care (health-seeking) behaviors in case of sickness or injury, partly to examine the effects of health insurance coverage. The analysis is based on the response to Question 22 which is as follows:

Q22. What would you do if you get sick or injured? (Circle one that is applicable)

1) I would go to the doctor immediately.
2) I would buy medicine to take.
3) I would wait and see.
4) Don't know.
5) Others ( )

The last three choices are collapsed into one category "others" because of low frequency of each. The first column shows the determinants selected for going to the doctor immediately in case of sickness or injury. Japanese Brazilians aged 45+ and those living in public housing are more likely, possibly because the first group is older and more concerned about health. Japanese Brazilians who first arrived in 1993-94, those who arrived at ages 40+, those living in Iwata for less than one year, and those not covered by health insurance are less likely. As expected, those without health insurance coverage are discouraged from going to the doctor immediately. Those living in Iwata for less than one year are less likely to go to the doctor immediately and are more likely to buy medicine (as shown in the second column) probably because they are not knowledgeable about medical care facilities in Iwata.

The second column presents the