

Foreign Ownership and Earnings in the Japanese Labor Market

Hiroshi Ono
Stockholm School of Economics

Working Paper Series Vol. 2003-10
June 2003

The views expressed in this publication are those of the author(s) and do not necessarily reflect those of the Institute.

No part of this book may be used reproduced in any manner whatsoever without written permission except in the case of brief quotations embodied in articles and reviews. For information, please write to the Centre.

*Foreign Ownership and Earnings
in the Japanese Labor Market*

Hiroshi Ono

Stockholm School of Economics

June 2003

ABSTRACT

This paper examines the relationship between foreign ownership and earnings in Japan. We find that foreign-owned firms in Japan pay higher wages for their workers than domestic firms. Our results suggest that the differential human capital composition and industry sector distribution of the workers can explain some but not all the differences in earnings between workers in domestic versus foreign firms.

One possible explanation is that foreign firms must pay higher wages to compensate workers for the risk associated with relinquishing their employment security with the domestic firms. We find some evidence to this effect, mainly high turnover and a lack of trust between workers and their employers in foreign firms.

Our empirical analysis highlights the differences in the structure of earnings between foreign versus domestic firms. Domestic firms exhibit all features that are consistent with the stylized facts of the Japanese labor market, mainly the persistence of seniority, lifetime employment, and firm-size effects. These effects have no impact on earnings among workers in foreign firms.

The evidence presented here suggests that foreign firms import their human resource practices along with them when they enter the Japanese market. Although they represent only a fraction of the Japanese labor market, our exclusive focus on foreign firms has revealed a microcosm of U.S. and European human resource practices operating in Japan.

Direct correspondences to Stockholm School of Economics, European Institute of Japanese Studies, P.O. Box 6501, 113 83 Stockholm, Sweden <hiroshi.ono@hhs.se>. This paper was originally presented at the MNC workshop, International Centre for the Study of East Asian Development (ICSEAD), Kokura, Japan, March 2003. I am grateful to ICSEAD for their financial support. I thank Keiko Ito, Masayuki Kakuho, Bob Lipsey, Craig Parsons, Fredrik Sjöholm and seminar participants at the Ministry of Economy, Trade and Industry for their helpful comments and suggestions.

Introduction

The evidence concerning the wage premium among foreign-owned firms has been established in numerous studies. However, in contrast to the volume of research concerning developing countries, studies that examine the wage differential among developed countries remain few. While Lipsey (2001) claims that “in every host country, multinationals pay higher wages than their locally owned counterparts,” such generalizations certainly deserve further empirical support, given that the evidence is confined to a handful of developed countries.

The main purpose of this project is to investigate the structure of earnings among foreign-owned firms in Japan. Our question of interest is: *Do foreign firms pay more than local firms in Japan? If so, why?* Empirical studies in this area remain surprisingly few, and research opportunities remain vast. Our research focus on Japan is of considerable value in light of the so-called unique features of the Japanese labor market such as seniority, lifetime employment, and high degrees of gender segregation. Wage premiums may exist, but they may exist for reasons that are unique to Japan. We perform detailed econometric analysis of individual-level data in order to better understand the structure of human capital and earnings among workers in foreign-owned versus local firms in Japan. The current research project will advance our understanding of the operations of foreign multinationals in Japan, and add further empirical support to an area more deserving of evidence.

Theoretical Considerations

Owing to improvements in data access, there is now convincing evidence that foreign firms pay higher wages than local firms in developing countries.¹ The evidence is less abundant among developed countries. Of the few existing studies, the wage premium associated with foreign affiliates has been confirmed in the U.K. (Girma, Greenaway and Wakelin 1999) and in the U.S. (Feliciano and Lipsey 1999, Lipsey 1994).

Much less clear is *why* foreign firms pay higher wages than domestic firms. A plausible explanation is that foreign firms, in one capacity or another, are able to attract higher quality workers, set up large-scale establishments, and operate in high-wage industries. However, many studies have confirmed that the wage premium exists even after controlling for various human capital and employer level characteristics.

The question more accurately posed then, is why foreign firms would pay more for labor of a given quality (Lipsey 2002). One explanation concerns the latecomer disadvantage. By default, foreign firms face a latecomer disadvantage of competing against local firms that have superior knowledge of local markets, consumer preferences, and business practices (Blomström and Kokko 2003). Wage premiums *must* be offered to attract better workers in order to overcome the late-comer disadvantage in an efficient and timely manner. Phrased another way, it is theoretically inconceivable why foreign firms would pay *lower* wages than domestic firms.

Another explanation is that foreign firms pay “efficiency wages” to reduce worker turnover, in order to prevent their proprietary knowledge or technology from leaking out to domestic rivals (Lipsey 2002). The efficiency wage explanation is particularly applicable

in the case of developing countries where foreign multinationals have reason to be concerned about their advanced technology leaking out to local markets. It is also relevant to developed countries characterized by high labor turnover such as the U.S. where firms may fear the loss of their proprietary information through labor turnover (Feliciano and Lipsey 1999).

The Case of Japan

Wage premiums may exist between foreign-owned versus local firms in technologically advanced countries, but they exist for different reasons. Efficiency wage is not a plausible explanation in Japan, considering that the Japanese labor market is *de facto* characterized by strong levels of employee attachment and one of the lowest labor turnover in the world.

If wage premiums exist among foreign firms in Japan, compensating wage differentials is a more reasonable explanation than efficiency wages. Foreign firms in Japan are reputed for their high turnover. Further, foreign firms engage in aggressive poaching (or headhunting) tactics, mainly to minimize their recruiting, training and search costs in order to overcome their latecomer disadvantage in the local market. The theory of compensating wage differentials implies that poached workers must be compensated for relinquishing their employment security with the local firms. The wage premium is therefore a risk premium. Foreign firms must not only pay higher wages to attract a high quality labor force, but they must also pay a premium to retain them.

Similarly, it may be argued that workers simply prefer domestic firms, so they must be compensated to overcome this preference (Lipsey 2002). From a human resources perspective, the biggest latecomer disadvantage that confronts foreign firms is their lack of brand recognition. Brands can be a considerable asset in attracting valuable human resources insofar as it provides greater information, reputation and trust, all of which reduces uncertainty for the applicant. By design, foreign firms suffer from a brand deficit, which is particularly damaging in a brand-conscious society such as Japan. A premium must be offered to workers for the disutility of detaching them away from domestic and into foreign firms.

Features of the Japanese employment system versus the West

When firms set up foreign affiliates, they bring their proprietary technology and their firm-specific advantage that allows them to compete successfully with local firms (Blomström and Kokko 2003). Foreign firms may also import their human resource practices along with them. The differences in earnings may therefore be generated through the complex interactions between employment practices and human capital which take place within domestic and foreign firms.

In this section, we focus on some of the stylized facts of the Japanese employment system. The discussion highlights notable differences in the structure of earnings between workers in domestic versus foreign firms. We focus mainly on Japan-U.S. differences due to the lack of comparative literature from other regions, and because U.S. firms have the largest single-country market dominance of FDI in Japan (see discussion below).

The first distinction concerns seniority wages. A seniority-based wage structure is a system whereby wages rise with tenure (duration of employment with the same employer) and not necessarily with respect to work experience. Although the seniority system is not unique to Japan, comparative studies have confirmed that the seniority effect is stronger among Japanese employers (Kawashima and Tachibanaki 1986; Mincer and Higuchi 1989). For example, Hashimoto and Raisian (1985) find that the tenure-earnings profile of Japanese workers is steeper than that of American workers.

One interpretation of the seniority effect is that it measures the extent of on-the-job training provided by firms (Mincer 1971). The steepness of the earnings profile as a function of tenure implies a “gift exchange” relationship (Akerlof 1982) where workers receive on-the-job training during younger stages at depressed wages, and reap the returns from their training at later stages. The fact that the seniority effect is greater for workers in Japanese firms therefore implies that these workers receive greater on-the-job training than workers in Western firms, which is consistent with the evidence, at least in manufacturing.² Since on-the-job training is by definition firm-specific (Becker 1993), it follows that the returns to firm-specific skills are higher among workers in Japanese firms.

Second, international comparisons among OECD countries have consistently found that the rate of return to education in Japan is one of the lowest among OECD countries (see for example, OECD 2002). To reconcile this fact with seniority wages, it can be argued that the returns to general education (or general skills) are low because the returns to firm-specific skills are high. Workers are employed with the expectation that they will become more productive through on-the-job training. Employer expectations on the

workers' general skills are not necessarily high so general education commands a lower price.

Third, labor turnover in Japan is lower than the OECD average. "Lifetime employment" may be an overstatement, but evidence suggests that job separation rates are lower and average tenure is longer than most OECD countries (Auer and Cazes 2000). This contrast is greater when compared to the U.S. which is characterized with the opposite extreme. Numerous empirical studies have found that interfirm mobility is lower in Japan than in the U.S. (Hashimoto and Raisian 1985, 1989; Mincer and Higuchi 1987; Tachibanaki 1984).

One implication of long-term employment practices is that there is a stigma attached to job changers. The labor market is governed by the norm that workers remain committed to their employers. A job change signals a breach in this implicit relationship which may result in a penalty. Hashimoto and Raisian (1985), for example, find that years of work experience previous to the current firm tend to penalize earnings growth among Japanese workers, while the reverse holds true for U.S. workers. Ono (*forthcoming*) finds that the number of previous employers depresses earnings among male workers in Japan, and Kato and Rockel (1992) find a similar pattern of rewards at the executive level. In Japanese corporations, compensation is structured "so as to have managers penalized for job changes, whereas U.S. corporations tend to reward managers for engaging in job hopping" (Kato and Rockel 1992: 47). This incentive structure encourages workers to be committed to the firm.

Fourth, comparative studies have found that labor market demarcation in Japan is more pronounced along lines of firm size rather than along different product markets and industries (Bronfenbrenner and Yasuba 1987; Kalleberg and Lincoln 1988; Kawashima and

Tachibanaki 1986; Rebick 1993; Tachibanaki and Ohta 1994). In contrast to large firms, small firms on average pay lower wages for similar types of work and provide fewer fringe benefits.³ The firm-size effect is not unique to Japan, but its magnitude is stronger than those reported in other countries. For example, Rebick (1993) finds that the difference in logged average hourly earnings between large (more than 1000) and small firms (less than 100) in Japan was .54 compared to .28 in the U.S.

Fifth, the variance in wages in Japan is one of the lowest among OECD countries. Ohta (2000) examines earning data for 16 OECD countries and shows that Japan has the third lowest dispersion of market wages as measured by the Gini coefficient. The relatively narrow bandwidth of earnings reflects in part the seniority effect where wages automatically rise with respect to age and seniority and less so with respect to performance and productivity.

And finally, numerous institutional barriers remain which prevent the equal participation of women in the labor market. Seniority and lifetime employment, for example, presume long-term commitment to the firm so that the firm can invest in the worker's on-the-job training. Japanese women who still shoulder a majority of non-market responsibilities are disadvantaged under such conditions because they must exit the labor force more frequently than men. The exodus of women from the labor force as they enter their years of non-market responsibilities results in a sharp decline in the labor force participation of women in their mid-thirties. International comparisons consistently show that this pattern of decline from the labor force is most pronounced among OECD countries (ILO 2000).

The gender division of labor in Japan results in a gender segregated structure of the labor market where men are placed into the “permanent” positions in the internal labor market and women are positioned into secondary jobs. Such gender differentiation is one of the reasons that Japanese women suffer from one of the largest gender gaps in wages among the industrialized countries (ILO 2000). Ono and Piper (*forthcoming*) explain that women with career aspirations in Japan are increasingly attracted to foreign firms in Japan or elsewhere because they can bypass the institutional barriers that confront them in the Japanese labor market.

Foreign Firms and Employment in Japan

Inward foreign direct investment (FDI) remains relatively low in Japan, especially accounting for the scale of its economy and high income levels (Urata 1996). A report released by JETRO in October 2002 (hereafter the JETRO report) found that the total number of workers employed by foreign-owned firms in Japan exceeded one million workers in 2002, but that this represents only 2.3% of the entire Japanese labor force – less than half the proportion reported in the U.S. and Germany. However, FDI penetration is expected to increase given the undergoing deregulations and the various incentives to induce foreign capital into Japan (Blomström, Konan and Lipsey 2001; JETRO 2002). We briefly review the highlights of what we know about employment and employment practices of foreign-owned firms in Japan as described by two representative government reports.

The METI Report

The Ministry of Economy, Trade and Industry (METI) monitors the activities of foreign firms in Japan and reports their results in the publication, *Survey of Trends in Business Activities of Foreign Affiliates* (hereafter the METI report). The report provides a comprehensive overview of activities, but information concerning employment among foreign affiliates is limited. Another shortcoming is that the survey does not include the finance and insurance sector, which turns out to have the highest proportion of workers employed in the foreign sector (see following section under “JETRO Report”). This caveat should be noted in interpreting the outcome of the survey.

The 2001 METI report finds that (of the total number of foreign firms in Japan), the proportion of U.S. firms is 41 percent, and is equivalent to the proportion of European firms. The remaining proportion is represented by firms from Asia and other regions. The proportion of sales is roughly equivalent, with American firms at 44 percent and European firms at 45 percent. In terms of the number of employees, U.S. and European firms represent over 90 percent of all employees in foreign firms, with 52 percent employed in U.S. firms and 41 percent employed in European firms.

These proportions highlight the market dominance of “Western” firms, or the single country dominance of U.S. firms among the foreign owned firms in Japan. This fact should be kept in mind in our statistical analysis of workers in foreign firms. Our sample of workers in foreign firms does not allow us to distinguish the nationality of the firms. However, given that over 90 percent of these workers are employed by U.S. or European firms, we may infer that earnings structures and employment practices among foreign firms reflect features representing these countries.

52 percent of the foreign firms surveyed had adopted an annual salary system. The Ministry of Health, Labor and Welfare (MHLW)'s definition of an annual salary system (*nenposei*) is "a system under which wages are decided on an annual basis and is determined primarily by ability and performance." However, in practice, the annual salary system involves negotiation of employment renewal and not just wages. Hence the system is taken to be synonymous with short-term contract and characterizes an employment relationship which contrasts greatly from the implicit long-term contract representative of Japanese firms. The METI report finds that the proportion of foreign firms with annual salary systems is: (i) Higher in the non-manufacturing (versus manufacturing) sector; (ii) Higher among managers (versus regular employees); and (iii) Increases as the percentage of foreign ownership increases, e.g. the proportion is 60 percent among firms that are 100 percent foreign owned.

Among Japanese firms, the proportion of firms with an annual salary system was 12.3 percent in 1998 (Ministry of Labor 1999). The proportion is higher among larger firms – 25.6 percent among firms with more than 1000 employees versus 10.8 percent among firms with less than 100 employees. The 12.3 percent marks an increase from the 8.6 percent in 1996, but it is still small in comparison to the comparable proportion (52 percent) among foreign owned firms.

And finally, the METI report explains that 42 percent of foreign firms surveyed claimed difficulty in securing human resources. Higher proportions were reported among firms with higher percentage of foreign ownership. Securing here refers to both finding and retaining human resources. The outcome confirms in part the late-comer disadvantage

confronting foreign firms and their operations in Japan. Their lack of brand recognition is a major deficit as they must compete for human resources in the Japanese labor market.

The JETRO Report

In May 2002, Japan External Trade Organization (JETRO) released the results of their survey of employment status among foreign firms in Japan. The JETRO report is the first of its kind which focused exclusively on employment-related issues among foreign firms. Unlike the METI report, the JETRO report covers all industry sectors, and employs survey weights to estimate proportions representative of the general working population in Japan.

The JETRO report estimates that there were approximately 1 million workers employed by foreign firms in Japan, which represents 2.3 percent of the Japanese working population. This is less than half of the proportion confirmed in the U.S. (5.4 percent) and Germany (5.3 percent).

Highlights of the JETRO report include the following: (i) Finance and insurance sector has the highest proportion (12 percent) of workers employed by foreign firms; (ii) 52% of workers in foreign firms are employed in Tokyo; (iii) Of the total number of workers employed by foreign firms, 50 percent are employed in manufacturing; (iv) Average firm size is largest in manufacturing, followed by finance and insurance and services.

An important finding in the JETRO report is that 80 percent of the foreign firms surveyed claimed that they plan to either increase or sustain employment levels in the future, and 95 percent of these firms plan to do so through mid-career intakes of

administrative and professional staff. The outcome confirms the general trend that foreign firms plan to step up their activities in Japan. It is also consistent with the perception that foreign firms engage in aggressive poaching of human resources.

Data

The main dataset for the project is *Working Persons 2000*, administered by Recruit Works Institute in August 2000. The data were collected from men and women employed in the labor force at the time of the survey in the three geographic locations – the greater Tokyo metropolitan area (Tokyo, Kanagawa, Chiba, Saitama, Ibaragi), Kansai area (Kyoto, Osaka and Hyogo) and Tokai area (Nagoya). Ages of respondents range from 18 to 59, and the total sample size is 17,253, comprised of 11,862 men and 5,391 women. The data are weighted using the survey final weights.⁴ We exclude part-time workers in our analysis.

The survey asked a wide range of questions concerning the respondents' employment. This information includes: education, annual earnings, total years of work experience, tenure (= years of work experience with the current employer), information about previous employment, job-search channel for current job, and level of skills (e.g. credentials and licenses, English ability, computer literacy), and demographic characteristics (age, sex, marital status, children status, type of residence, etc.). In addition, various attitudinal questions were asked, allowing us to examine differences in values and attitudes between various groups of workers. Examples include: job satisfaction, attitudes concerning job changes, reasons for choosing current employer, and entrepreneurial aspirations.

Because *Working Persons* is an individual-level dataset, it offers numerous advantages which overcome the shortcomings of firm-level datasets. The most important among these features is the ability to control for a wide range of human capital and job-related variables. But the dataset is not without its shortcomings and I outline them below. First, information about the employer is limited to its industry and firm-size. We do not have information concerning the firm's performance, financial standing, or nationality. Second, the distinction between foreign versus domestic firm is binary. We do not know the proportion of the firm's foreign ownership. Third, there was a small proportion of respondents who did not know whether their current employer was foreign-owned or not. These respondents were excluded from the sample.

Analysis and Results

Characteristics of workers in foreign firms in Japan

The proportion of workers who were found to be working in foreign firms at the time of the survey was 2.4 percent. This compares well with the JETRO survey results which found this proportion to be 2.3 percent in May 2002. The proportion is highest in the Tokyo region (2.8 percent), followed by the Kansai region (2.1 percent) and the Tokai region (1.2 percent).

Table 1 highlights some of the main features of domestic versus foreign firms. All differences in means are found to be significant at the $p = .01$ level, except for the proportion of female workers.

TABLE 1 Main characteristics of domestic versus foreign firms

	Domestic	Foreign
Age	38.1	36.1
Proportion female	28.0%	25.2% ^{NS}
Education in years	13.4	14.0
Firm size	1,592.1	2,206.3
Income (million yen)	5.08	6.37

NS = Not significant. All other differences in means between domestic and foreign firms significant at $p = .01$ level.

The mean age of workers in foreign firms is 36.1 years, which is two years younger than the mean age among domestic firms. Although not reported here, we find that the age distribution among both types of firms is similar except at the high end of the distribution; domestic firms employ a larger proportion of older workers, especially workers in their 50s, which is attributable to their higher overall age structure. The proportion of women working in foreign firms is 25 percent versus 28 percent in domestic firms. This difference is not statistically significant. Average education in years is 14 years in foreign firms versus 13.4 years in domestic firms. Education and human capital measures will be discussed in greater detail below. The average firm size of foreign firms is 2,206 employees and is larger than that of domestic firms at 1,592 employees. And finally, average earnings at foreign firms is 6.37 million yen which is 25 percent higher than the 5.08 million yen among domestic firms.

The stock of human capital

We examine a number of measures to assess the quantity and quality of human capital among domestic and foreign firms. Table 2 reports the education measures. All differences in means between domestic and foreign firms are significant at the $p = .01$ level.

As described previously, workers in foreign firms have more education. This difference is more pronounced among the women. In fact, on average, women working in foreign firms are more educated than men working in domestic firms. The high level of educational attainment among women in foreign firms confirms in part Ono and Piper (*forthcoming*)’s finding, that foreign firms attract women with high career aspirations.

In addition to the longer years of education, workers in foreign firms are more likely to be university graduates, and more likely to be graduates from the top national and private universities. We observe a consistent pattern across all categories. Men working in foreign firms are most educated, women in domestic firms are least educated, and the two remaining groups fall somewhere in between. In fact, the means test comparisons between the education measures for men in domestic firms versus women in foreign firms confirm that the two groups are not significantly different from each other. Statistically speaking, the two groups of workers are on equal terms.

TABLE 2 Education measures by sex

	Total		Men		Women	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
Education in years	13.3	14.0	13.5	14.1	13.1	13.8
University graduates	33.1%	46.9%	39.9%	51.3%	15.9%	34.0%
Graduates from top national universities ¹	6.8%	9.7%	7.8%	10.7%	1.2%	6.7%
Graduates from top private universities ²	6.7%	7.7%	7.2%	8.3%	3.4%	6.7%

All differences in means between domestic and foreign firms significant at $p = .01$ level.

¹ Out of the total number of university graduates. Top national universities include Hokkaido, Tohoku, Tokyo, Tokyo Institute of Technology, Hitotsubashi, Nagoya, Kyoto, Osaka, Kobe and Kyushu.

² Out of the total number of university graduates. Top private universities include Waseda and Keio.

Table 3 examines the self-reported computer skills. All differences in means are statistically significant at the $p = .01$ level. We find that in all categories of computer use, workers in foreign firms outscore workers in domestic firms. Women working in foreign firms are the most computer literate except in the category of computer programming. 80 percent felt comfortable with the level of computer skills demanded at work while only half did so among men and women in domestic firms.

TABLE 3 Computer skills by sex

	Total		Men		Women	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
<i>Ability to use:</i>						
Email	53.7%	70.4%	53.9%	69.0%	53.0%	74.3%
Internet	50.3%	64.5%	50.9%	63.9%	48.9%	66.2%
Office software	51.1%	70.1%	53.0%	70.1%	46.5%	70.2%
Database	14.2%	28.9%	16.2%	28.5%	9.5%	29.9%
Programming	21.4%	29.7%	23.0%	32.8%	17.6%	20.9%
<i>I cannot use a computer</i>	29.9%	15.9%	29.7%	16.2%	30.4%	15.1%
<i>Do you feel comfortable with the level of computer skills demanded at work?</i>						
Yes	52.5%	71.0%	54.1%	68.0%	48.8%	79.5%
No	19.4%	13.3%	19.7%	15.0%	18.7%	8.4%
Computer skills are not demanded at work	28.1%	15.8%	26.2%	17.1%	32.6%	12.1%

All differences in means between domestic and foreign firms significant at $p = .01$ level.

And finally, we examine English ability of the workers. All differences in means are statistically significant at $p = .01$ level. English ability may be a prerequisite for working in foreign firms, and the results confirm this. Self-assessed English conversation skills is much higher among workers in foreign firms. The proportion of workers who have passed the certified English examinations administered by the Ministry of Education is also

much higher among workers in foreign firms.⁵ And again, we find that women in foreign firms have the highest English ability according to the measures examined here.

TABLE 4 English ability by sex

	Total		Men		Women	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
English conversation skill (1: low to 4:high)	1.24	1.73	1.25	1.72	1.23	1.74
Certified English ¹	24.3%	32.6%	18.9%	24.6%	37.5%	54.8%
<i>Do you feel comfortable with the level of English demanded at work?</i>						
Yes	15.8%	37.0%	17.4%	36.9%	12.0%	37.2%
No	20.8%	33.2%	22.9%	35.4%	15.8%	27.0%
English is not demanded at work	63.4%	29.8%	59.7%	27.7%	72.2%	35.8%

All differences in means between domestic and foreign firms significant at $p = .01$ level.

¹ See text for explanation.

In sum, the results point quite convincingly, that foreign firms have a higher stock of human capital than domestic firms. Workers in foreign firms have more education, higher computer literacy, and higher English ability. Women in foreign firms are highly endowed with computer and English skills, much more so than men and women in domestic firms.

Employment characteristics

We examine a set of available measures that describes workers' employment characteristics. In the current discussion and hereafter, tenure refers to the duration of employment with the current employer, and a job change refers to a change in employer. Workers in foreign firms have shorter work experience and tenure, but this may simply

reflect the fact that they are on average two years younger than the workers in domestic firms (as reported in Table 1).

TABLE 5 Employment characteristics

	Domestic	Foreign
Work experience in years	18.73	16.14
Tenure in years	12.57	10.04
Proportion job changers	42.8%	57.1%
Number of previous employers	1.00	1.03 ^{NS}
Job satisfaction	2.80	2.92
Likelihood of job change in future	39.7%	46.7%

NS: Not significant. All other differences in means between domestic and foreign firms significant at $p = .01$ level.

Workers in foreign firms are more likely to be job changers. For both categories of workers, the number of previous employers averages one, and this difference is not statistically significant. Mean job satisfaction scores range from 1 = low to 4 = high. Workers in foreign firms had a slightly higher job satisfaction score (and the difference is statistically significant at the $p = .01$ level). And finally, the last row reports the likelihood that workers will change jobs in the future. The “yes” responses include workers who are currently thinking of changing jobs to those who are thinking of doing so sometime in the future. Workers in foreign firms were more likely to respond that they intended to change jobs in the future.

We examine a set of responses to the questions concerning employment security. The first question is: Do you feel uncertain about your current employment? Workers in foreign firms were slightly more likely to respond “yes,” but the difference between categories is not statistically significant. The second question is: Do you trust your current

employer when it comes to protecting your employment, or protecting employment in general. Workers in foreign firms were less likely to respond “yes,” and this difference is statistically significant.

TABLE 6 Employment uncertainty and trust

	Proportion “Yes”		
	Domestic	Foreign	D vs F
<i>Q: Do you feel uncertainty about your current employment?</i>	57.7%	59.3%	
<i>Q: Do you trust your current employer when it comes to protecting your employment, or protecting employment in general?</i>	64.9%	56.8%	**

** $p < .01$

If workers in foreign firms are happier than workers in domestic firms, why are they also more inclined to change jobs in the future? We conducted a simple logistic regression to test how attitudes towards employment security and trust affect the likelihood of a job change in the future. The signs are consistent with general expectations: Higher job satisfaction and higher trust of the employer reduces the likelihood of a job change, while greater job uncertainty increases the likelihood. Interestingly, workers in foreign firms are 30 percent more likely to change jobs than workers in domestic firms, even after controlling for job satisfaction, uncertainty and trust. It appears that these workers are intrinsically more inclined to change jobs than others. A happy worker is not necessarily a committed worker. Recall that forty percent of foreign firms in the METI survey reported difficulty in securing human resources. Foreign firms may be successful in recruiting talent, but less so in retaining them.

TABLE 7 Logit coefficients predicting likelihood of job change

	Coef	Robust S.E.
Job satisfaction	-0.646**	(0.036)
Job uncertainty	0.248**	(0.030)
Trust	-0.731**	(0.041)
Foreign firm	0.299*	(0.127)
Constant	2.550**	(0.180)

Pseudo R² = 0.130, ** $p < .01$, * $p < .05$

We next examine a set of responses to the question: What is the most important factor that determines your wages? For workers in foreign firms, the most important wage determinant is individual performance and results (Table 8). This makes sense and is theoretically consistent with the position that higher productivity leads to higher wages.

TABLE 8 Wage determinants

	Domestic	Foreign
Working hours	24.5%	18.8%
Corporate performance and profit	21.8%	18.9%
Tenure	15.2%	7.8%
Performance and results	13.9%	25.3%
Ability	10.6%	13.4%
Job content	7.3%	11.1%
Age	5.5%	4.1%

In contrast, the most important wage determinant for workers in domestic firms is working hours. This response is not consistent with the fact that “salarymen” by definition are paid a monthly salary and not hourly wages. Working hours should therefore not factor into earnings. However, it is consistent with the Japanese work ethic, that the harder working, and not necessarily the most productive workers are paid more.

Table 8 also shows that the earnings among workers in domestic firms are more likely to be determined by tenure than the workers in foreign firms. This suggests that the workers are more committed and confirms that seniority effects still persist strongly in the Japanese labor market.

And finally, we examine the variance in earnings. It should be noted that the figures reported in Table 9 are unweighted, so there is some discrepancy between mean earnings reported here and in Table 1. The Gini coefficient is used here to measure the extent of earnings inequality.⁶ We also estimate the ratio of the top 10th percentile versus the bottom 10th percentile in earnings (reported under the column “P90/P10”). The Gini for the entire sample is .297 and the top/bottom ratio is 4.50.

TABLE 9 Variance in earnings

	Mean earnings (million yen)	S.D.	Gini	P90/P10
All	5.12	2.96	0.297	4.50
Domestic	5.07	2.89	0.284	4.50
Men	5.86	2.82	0.243	3.27
Women	3.07	1.93	0.256	4.17
Foreign	6.28	4.59	0.337	4.58
Men	7.31	4.88	0.305	4.14
Women	3.48	1.73	0.237	3.12

In general, we find that the earnings are more dispersed among workers in foreign firms. Both the Gini and the top/bottom ratio are higher among these workers than their domestic counterparts. These results are consistent with the finding that workers in foreign firms are rewarded more for their individual performance and results, and less so for their

tenure. Having a greater portion of the salary being determined by individual performance results in greater variance.

When we breakdown the sample by gender, we find that the variance in earnings is greater among men than women in foreign firms, but the reverse holds true in domestic firms. This finding most likely reflects the pattern of frequent entry and exit from the labor force among Japanese women.

Estimating the earnings premium

We run a set of earnings regressions in order to estimate the earnings premium for working in foreign firms before and after controlling for various characteristics. The dependent variable is logged earnings. Following Görg, Strobl and Walsh (2002), we distinguish three groups of control variables. Human capital variables include education, experience, experience squared, English ability, computer skills, sex and marital status. Job characteristics include tenure, tenure squared, and six occupation dummies. Firm characteristics include region, industry sector and firm size.

The unadjusted premium which does not control for any of the above variables is 16.3 percent (Column 1). The premium is reduced considerably when we control for human capital (Column 2). This is expected since we have already established that foreign firms have a greater stock of human capital than domestic firms. However, despite the reduction we are still left with a premium of 8.3 percent. When we control for job characteristics, the premium increases to 11.6 percent. This increase results from the negative association between foreign ownership and tenure which we observed in Table 5. And finally, when we control for firm characteristics, we obtain a premium of 9.3 percent.

These results effectively rule out the possibility that differential composition of human capital and industry segmentation generates the wage premium for foreign firms.

TABLE 10 Earnings premium in foreign firms

	(1)	(2)	(3)	(4)
Foreign firm	0.163 ** (0.044)	0.083 * (0.037)	0.116 ** (0.033)	0.093 ** (0.033)
Constant	15.285 ** (0.008)	14.070 ** (0.047)	14.206 ** (0.047)	14.261 ** (0.056)
Controls				
Human capital	No	Yes	Yes	Yes
Job characteristics	No	No	Yes	Yes
Firm characteristics	No	No	No	Yes
R ²	0.002	0.499	0.564	0.582

** $p < .01$, * $p < .05$

Robust standard errors in parenthesis.

The structure of earnings

We examine in greater detail, how the structure of earnings differ between workers in foreign versus domestic firms. Columns 1 to 3 in Table 11 shows the effects of education, experience and tenure on logged earnings for the two groups of workers. The column “D vs F” indicates whether the differences in the coefficients between domestic versus foreign firms are statistically significant. The results confirm the stylized view of earnings for both groups of workers.

Workers in foreign firms have a higher return to education and experience, and a lower return to tenure than workers in domestic firms (Figure 1). This finding is consistent with the position that returns to general skills and work experience are lower among Japanese firms, while returns to firm-specific skills are higher.

Workers in domestic firms also have higher returns to tenure, which may reflect greater intensity of training provided by domestic firms. The results confirm the significance of seniority effects among Japanese firms. The R-squared in Columns 1 and 2 suggest that experience is a more powerful predictor of earnings than tenure for foreign firms, while the reverse holds true for domestic firms. In fact, in Column 3, we observe that the tenure effects among foreign firms are wiped out after controlling for experience, but remain highly significant for domestic firms.

The results also show that women earn less than men in both domestic and foreign firms, but the gender gap is more pronounced among domestic firms. The favorable working conditions among foreign firms, at least with respect to earnings, may be one reason why highly educated Japanese women are increasingly more attracted to foreign firms.

TABLE 11 Education, experience, and tenure effects on earnings

	(1)		(2)		(3)	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
Education	0.072** (2.25x10 ³)	0.103** (0.012)	0.053** (2.48x10 ³)	0.110** (0.012)	0.062** (2.28x10 ³)	0.103** (0.011)
Experience	0.045** (2.43x10 ³)	0.089** (0.015)			0.027** (3.24x10 ³)	0.081** (0.012)
Experience squared	-6.40x10 ⁴ ** (6.28x10 ⁵)	-1.73x10 ² ** (4.60x10 ⁴)			-4.49x10 ⁴ ** (8.82x10 ⁵)	-1.76x10 ² ** (3.90x10 ⁴)
Tenure			0.044** (2.19x10 ³)	0.033** (0.011)	0.031** (2.99x10 ³)	1.65x10 ³ (0.013)
Tenure squared			-5.75x10 ⁴ ** (5.96x10 ⁵)	-2.76x10 ⁴ (3.17x10 ⁴)	-3.72x10 ⁴ ** (8.96x10 ⁵)	4.36x10 ⁴ (3.01x10 ⁴)
Sex	-0.589** (0.021)	-0.354** (0.073)	-0.532** (0.020)	-0.521** (0.069)	-0.525** (0.020)	-0.367** (0.074)
Constant	13.964** (0.040)	13.366** (0.180)	14.361** (0.034)	13.851** (0.197)	14.068** (0.039)	13.397** (0.176)
R ²	0.467	0.554	0.507	0.502	0.529	0.580

** $p < 0.01$, * $p < 0.05$

Robust standard errors in parenthesis.

All regressions control for sex and area.

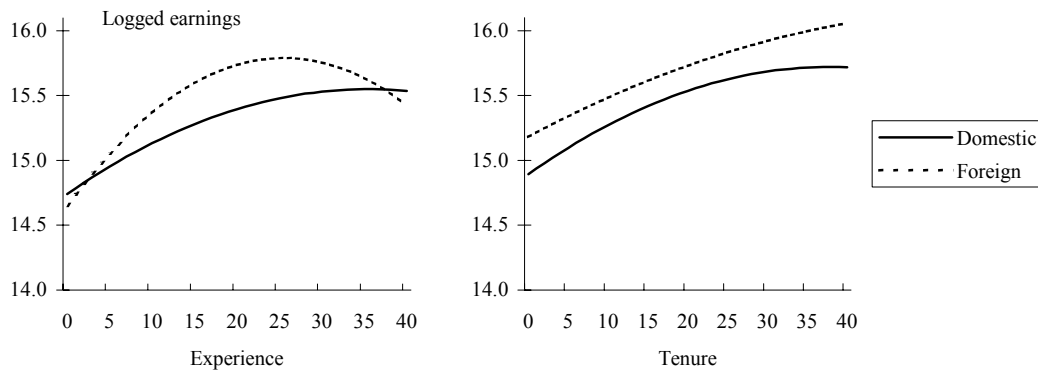


FIGURE 1 Earnings profiles as a function of experience and tenure

TABLE 12 The effect of job changes on earnings

	Domestic	Foreign	D vs F
Job change	-0.239** (0.013)	-0.055 (0.052)	**
R ²	0.501	0.555	
Number of previous employers	-0.068** (0.007)	-0.010 (0.023)	*
R ²	0.495	0.554	

** $p < .01$, * $p < .05$

Robust standard errors in parenthesis.

All regressions control for education, experience, sex and area.

We next examine the effects of previous job changes on current earnings. The variable “job change” is coded one if the worker has any previous job changes and zero otherwise. The results show that a job change leads to lower earnings in domestic firms, but has no effect on earnings among foreign firms. The results are similar when we examine the effect of the number of previous employers. For workers in domestic firms, job changes result in lower earnings; for workers in foreign firms the job changes have no

effect on their earnings. These results confirm that lifetime employment still remains the norm among Japanese employers. Job changes do occur, but there are penalties associated with them.

And finally, we examine the effects of firm-level characteristics on earnings. In Column 1 we confirm that workers in large firms earn more in domestic firms, but not in foreign firms. In Column 2, we find that in both domestic and foreign firms, there is some variation in earnings across industry sector, with the finance sector paying highest for both groups of firms. Judging by the improvements in R-squared, we find that firm-size is a more powerful predictor of earnings than industry sector for domestic firms while the reverse holds true for foreign firms. These results are consistent with previous studies that found a similar pattern of earnings differentiation between workers in the U.S. and Japan. As a final test we include both firm-size and industry sector in the regression (Column 3) but the results are not significantly different from those reported in Columns 1 and 2.

TABLE 13 Firm-size and industry effects on earnings

	(1)		(2)		(3)	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
Logged firm-size	0.051** (0.003)	0.021 (0.020)			0.050** (0.003)	0.014 (0.022)
Retail			-0.099** (0.018)	-0.050 (0.082)	-0.057** (0.018)	-0.051 (0.079)
Finance, insurance			0.072* (0.029)	0.213** (0.065)	0.033 (0.027)	0.205** (0.063)
Services			-0.057** (0.016)	-0.109 (0.122)	-0.002 (0.018)	-0.104 (0.131)
Other			-0.054 (0.031)	-0.215 (0.204)	-0.007 (0.030)	-0.194 (0.212)
R ²	0.508	0.558	0.473	0.577	0.510	0.579

** $p < 0.01$, * $p < 0.05$

Robust standard errors in parenthesis.

All regressions control for education, experience, sex and area.

Summary and Conclusions

Foreign-owned firms in Japan pay higher wages for their workers than domestic firms. Foreign firms have a higher stock of human capital than do domestic firms, and they are more likely to be established in higher paying sectors such as finance which accounts for much of the premium. However, we find that the premium remains even after we control for human capital and firm-level characteristics. Our results suggest that the differential human capital composition and industry sector distribution of the workers can explain some but not all the differences in earnings between the two groups of workers.

One possible explanation is that foreign firms must pay higher wages to compensate workers for the risk associated with relinquishing their employment security with the domestic firms. Hence, not only must foreign firms pay high wages and recruit high quality workers to overcome their latecomer disadvantage, but they must also pay a premium for retaining them. We find some evidence to this effect. For example, we find higher labor turnover in foreign firms. We also find that workers in foreign establishments trust their employers less than their domestic counterparts.

Our empirical analysis has highlighted the differences in the structure of earnings between foreign versus domestic firms. The domestic firms exhibit all features that are consistent with the stylized facts of the Japanese labor market, mainly the persistence of seniority, lifetime employment, and firm-size effects. These factors have no impact on earnings among workers in foreign firms. We also find that the gender gap in earnings is less pronounced among workers in foreign firms, suggesting that at least in terms of

earnings, foreign firms can be an attractive opportunity for Japanese women with high career aspirations.

The evidence presented here suggests that foreign firms import their human resource practices along with them when they enter the Japanese market. Although their representation in the Japanese labor market is still minuscule, our exclusive focus on foreign firms has revealed a microcosm of U.S. and European human resource practices operating in Japan.

In a recent policy speech, Prime Minister Koizumi called for a doubling of foreign direct investment into Japan from 6.5 billion yen to 13 billion yen by 2008 (*Financial Times*, February 18, 2003). The JETRO report also claims that a majority of the foreign firms plan to increase employment in the future. Research that examines the interactions between FDI and human capital in Japan will remain an increasingly important topic for the foreseeable future.

Endnotes

¹ See for example, Görg, Strobl and Walsh (2002) for a study in Ghana, and Lipsey and Sjöholm (2001) for a study in Indonesia.

² In one of the few studies that examine direct evidence of training intensity between countries, MacDuffie and Kochan (1995) report that Japanese plants (in the auto industry) located in Japan provide the longest hours of training followed by Japanese plants in North America. The lowest level of training was found in plants located in the U.S. and Australia.

³ For example, Bronfenbrenner and Yasuba (1987) find that in 1960, the ratio of mean wages in establishments with 5-29 workers versus establishments with more than 500 workers was .46. In 1980, this ratio was .58. See also, Lincoln and Kalleberg (1985) and Lincoln and McBride (1987) for explanations of firm-size differences in Japan.

⁴ Survey weights are weighed by age group and employment status as reported in the *1995 Employment Status Survey*, Ministry of Public Management, Home Affairs, Posts and Telecommunications.

⁵ These tests are known as the Standard Test of English Proficiency (or *Eiken*) and are administered by the Ministry of Education. Test levels range from Grade 4 (lowest) to Grade 1 (highest). The proportion here includes respondents who have passed any of these four levels.

⁶ The Gini index ranges from 0 to 1 with higher values indicating a greater degree of inequality.

Bibliography

- Akerlof, George A. 1982. "Labor Contracts as Partial Gift Exchange." *Quarterly Journal of Economics* 97: 543-569.
- Auer, Peter and Sandrine Cazes. 2000. "The Resilience of Long-term Employment Relationship: Evidence from the Industrialized Countries." *International Labour Review* 139: 379-408.
- Becker, Gary S. 1993. *Human Capital*. Chicago: University of Chicago Press.
- Blomström, Magnus, Denise Konan, and Robert E. Lipsey. 2001. "FDI in the Restructuring of the Japanese Economy." In *Japan's New Economy: Continuity and Change in the Twenty-First Century*, edited by Magnus Blomström, Byron Gangnes, and Sumner LaCroix. Oxford: Oxford University Press. Pp. 245-262.
- Blomström, Magnus and Ari Kokko. 2003. "Human Capital and Inward FDI." EIJS Working Paper 167.
- Bronfenbrenner, Martin and Yasukichi Yasuba. 1987. "Economic Welfare." In *The Political Economy of Japan, Volume 1: The Domestic Transformation*. Edited by Kozo Yamamura and Yasukichi Yasuba. Stanford: Stanford University Press. Pp. 93-136.
- Feliciano, Zadia and Robert E. Lipsey. 1999. "Foreign Ownership and Wages in the United States, 1987-1992." NBER Working Paper No.6923.
- Girma, Sourafel, David Greenaway and Katharine Wakelin. 1999. "Wages, Productivity and Foreign Ownership in UK Manufacturing." Center for Research on Globalisation and Labour Markets, Research Paper 99/14.
- Görg, Holger, Eric Strobl and Frank Walsh. 2002. "Why Do Foreign-Owned Firms Pay More? The Role of On-the-Job Training." IZA Discussion Paper No. 590.
- Hashimoto, Masanori and John Raisian. 1985. "Employment Tenure and Earnings Profiles in Japan and the United States." *American Economic Review* 75: 721-735.
- _____. 1989. "Investments in Employer-Employee Attachments by Japanese and U.S. Workers in Firms of Varying Size." *Journal of the Japanese and International Economies* 3: 31-48.
- Howenstine, Ned G. and William J. Zeile. 1994. "Characteristics of foreign-owned U.S. manufacturing establishments." *Survey of Current Business* 74: 34-59.
- International Labour Organization. 2000. *Year Book of Labour Statistics*. Geneva. International Labour Office.
- Japan External Trade Organization (JETRO). 2002. *Gaishikei kigyō kōyō chōsa – Kekka gaiyō* (Summary from the Employment Survey of Foreign-owned Firms). Tokyo: JETRO.
- Kalleberg, Arne L. and James R. Lincoln. 1988. "The Structure of Earnings Inequality in the United States and Japan." *American Journal of Sociology* 94: S121-S153.
- Kato, Takao and Mark Rockel. 1992. "Experiences, Credentials, and Compensation in the Japanese and U.S. Managerial Labor Markets: Evidence from New Micro Data." *Journal of the Japanese and International Economies* 6: 30-51.

- Kawashima, Yoko and Toshiaki Tachibanaki. 1986. "The Effect of Discrimination and of Industry Segmentation on Japanese Wage Differentials in Relation to Education." *International Journal of Industrial Organization* 4: 43-68.
- Lincoln, James R. and Arne L. Kalleberg. 1985. "Work Organization and Workforce Commitment: A Study of Plants and Employees in the U.S. and Japan." *American Sociological Review* 50: 738-760.
- Lincoln, James R. and Kerry McBride. 1987. "Japanese Industrial Organization in Comparative Perspective." *Annual Review of Sociology* 13: 289-312.
- Lipsey, Robert E. 1994. "Foreign-owned firms and U.S. Wages." NBER Working Paper No.4927.
- _____. 2001. "Foreign Direct Investment and the Operations of Multinational Firms." *NBER Reporter*, Winter 2000/2001.
- _____. 2002. "Home and Host Country Effects of FDI." NBER Working Paper No. 9293.
- Lipsey, Robert E. and Fredrik Sjöholm. 2001. "Foreign Direct Investment and Wages in Indonesian Manufacturing." NBER Working Paper No. 8299.
- MacDuffie, John Paul and Thomas A. Kochan. 1995. "Do U.S. Firms Invest Less in Human Resources? Training in the World Auto Industry." *Industrial Relations* 34: 147-168.
- Mincer, Jacob. 1971. *Schooling, Experience, and Earnings*. New York: Columbia University Press.
- Mincer, Jacob and Yoshio Higuchi. 1987. "Wage Structures and Labor Turnover in the U.S. and in Japan." NBER Working Paper No.2306.
- OECD. 2002. *Education at a Glance: OECD Indicators 2002*. Paris: OECD.
- Ohta, Kiyoshi. 2000. "Kokusai hikaku kara mita Nihon no shotoku kakusa" (Income distribution in Japan from an international perspective). *Japanese Journal of Labour Studies* 42: 33-40.
- Ono, Hiroshi. "College Quality and Earnings in the Japanese Labor Market" Forthcoming in *Industrial Relations*.
- Ono, Hiroshi and Nicola Piper. "Japanese Women Studying Abroad: The Case of the United States." Forthcoming in *Women's Studies International Forum*.
- Rebick, Marcus E. 1993. "The Persistence of Firm-Size Differentials and Labor Market Segmentation in Japan." *Journal of the Japanese and International Economies* 7: 132-156.
- Tachibanaki, Toshiaki. 1984. "Labor Mobility and Job Tenure." In *The Economic Analysis of the Japanese Firm*. Edited by Masahiko Aoki. Amsterdam: Elsevier Science Publishers. Pp. 77-102.
- Tachibanaki, Toshiaki and Souichi Ohta. 1994. "Wage Differentials by Industry and the Size of Firm, and Labour Market in Japan." In *Labour Market and Economic Performance: Europe, Japan and the USA*. Edited by Toshiaki Tachibanaki. New York: St. Martin's Press. Pp. 56-92.
- Ushioji, Morikazu. 1986. "Transition from High School to Work: The Japanese Case." In *Educational Policies in Crisis: Japanese and American Perspectives*. Edited by William K. Cummings, Edward R. Beauchamp, Shogo Ichikawa, Victor N. Kobayashi and Morikazu Ushioji. New York: Praeger. Pp. 197-209.

Urata, Shujiro. 1996. "Tai-nichi chokusetu toushi no genjo to sogai youin" (Barriers to Foreign Direct Investment in Japan). *Nihon Keizai Kenkyu*, No. 31: 66-82.