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foreign shareholders and the number of employees in
Japanese firm**

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Abstract

Foreign shareholders have purchased many stocks issued by Japanese firms in recent years. Thus, they are expected to have a strong influence. In this paper, I analyze whether or not foreign shareholders demand changes in the number of employees in the firms of the foods, chemical, glass, electronic products, land transportation, warehousing or wholesale industries on the basis of the financial data from the fiscal year 1997 to 2007. The analysis showed that the number of employees increase if foreign shareholders purchase stocks in the chemical and land transportation since managers gain confidence if foreign investors actively invest their company. On the other hand, foreign shareholders tend to invest firms which are going to reduce the number of employees in the electronic product.

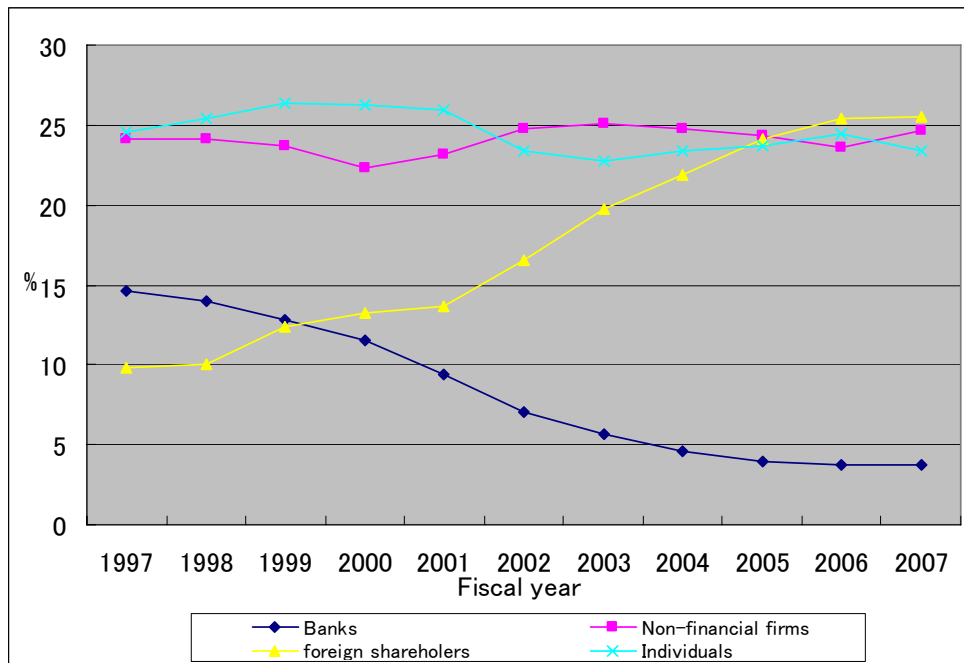
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1. Introduction

The behavior of firms is supposed to change as the percentage of each shareholder changes. In this paper, I examine whether foreign shareholders, which have actively purchased shares issued by Japanese firms, demand changes in the number of employees in Japanese firms. Long-term employment, guaranteed by Japanese firms, is threatened by foreign shareholders. If this approach is accurate, the number of employees in firms that have a large percentage of foreign shareholders should be considerably reduced. However, most managers in Japanese firms seem to maintain the traditional Japanese employment pattern. In this paper, I analyze whether or not foreign shareholders have demanded changes in the number of employees in the firms of the foods, chemical, glass, electronic products, land transportation, warehousing or wholesale industries. As a result, it is found that the number of employees has increased by the effects of foreign shareholders in the chemical and land transportation. In other words, it is thought that managers who have obtained confidence by investments of foreign shareholders have actively hired employees. On the other hand, it is found that foreign investors tend to invest firms which are expected to decrease the number of employees in the future in the electronic products.

Next, at the Figure 1, I will introduce the composition of the percentage of shareholders in Japanese listed firms from fiscal year 1997 to 2007. As this figure, the percentage of bank has decreased. On the other hand, the percentage of foreign shareholders has increased. After all, in fiscal year 2007, foreign shareholders are the largest shareholders in Japan.

Figure 1 The trend of the percentage of shareholders in Japan



Source: Tokyo Stock Exchange: *Kabushiki Bunpu Jokyō Chosa**

2. Analysis method

In this section, I will introduce the method and data used in this paper[†]. I collected the financial data from the NEEDS Financial Research Database. The target period is from the fiscal year 1997 to 2007. The target firms are those belonging to the foods, chemical, glass, electronic products, land transportation, warehousing or wholesale industries and were listed in the first or second section of the Tokyo, Osaka, Nagoya or other region Stock Exchanges on March 31, 2008. I had to adjust the financial terms since I used panel data. Therefore, I used the financial data from those firms that were sustained at the close of the fiscal year in March during this period.

In this analysis, the dependent variable is the percentage of change in the number of employees. The independent variables are the change in sales adjusted by the price index[‡], the change in capital intensiveness, which is the ratio of tangible fixed assets

* http://www.tse.or.jp/market/data/examination/distribute/h20/distribute_h20a.pdf

† Abe (2005) is foregoing study in this field. However, this analysis does not contain the research about foreign shareholders.

‡ The price index is *the total average* of the domestic firms' price index in March each year that is published by the Bank of Japan.

adjusted by the price index to the number of employees, the capital ratio (equity capital divided by total asset), the percentage of foreign shareholders, the logarithm of labor costs per employee adjusted by the price index, ROA (return on assets, operating profit divided by total asset), logarithm of the number of employees, the subsidiary firm dummy. Moreover, the data of parent-only earnings is used in this analysis. Next, I show the regressive equation in the following manner. In addition, regressions are estimated by OLS (ordinary least squares). Equations contain a cross section effect and a period effect.

Equation 1

$$\begin{aligned} (y_{it+1} - y_{it}) / y_{it} = & \beta_0 + \beta_1 z_{1,it} + \beta_2 (z_{2,it} - z_{2,it-1}) / z_{2,it-1} + \beta_3 (x_{it} - x_{it-1}) + \beta_4 z_{3,it} \\ & + \beta_5 z_{4,it} + \beta_6 (z_{5,it} - z_{5,it-1}) / z_{5,it-1} + \beta_7 z_{6,it} + \beta_8 \cdot D_{it,sub} + \alpha_i + \gamma_t + u_{it} \end{aligned}$$

y_{it+1} : The number of employees in firm i for the fiscal year $t+1$

y_{it} : The number of employees in firm i for the fiscal year t

$z_{1,it}$: The capital ratio in firm i for the fiscal year t

$z_{2,it}$: The change of capital intensiveness in firm i for the fiscal year t

$z_{2,it-1}$: The change of capital intensiveness in firm i for the fiscal year $t-1$

x_{it} : The percentage of foreign shareholders in firm i for the fiscal year t

x_{it-1} : The percentage of foreign shareholders in firm i for the fiscal year $t-1$

$z_{3,it}$: The logarithm of labor costs per employee in firm i for the fiscal year

$z_{4,it}$: The ratio of operative profit to total asset (ROA) of firm i for the fiscal year t

$z_{5,it}$: Sale of firm i for the fiscal year t

$z_{5,it-1}$: Sale of firm i for the fiscal year $t-1$

http://www.boj.or.jp/type/stat/dlong/price/cgpi_2005/g05_1001.csv

$z_{6,it}$: The logarithm of the number of employees of firm i for the fiscal year t

$D_{it,sub}$: The subsidiary firm dummy variable assumes the value of one if firm i is a subsidiary firm for other firms for the fiscal year t .

α_i : The firm dummy: cross section effect

γ_t : The time dummy: period effect

u_{it} : Error term

3. Results and discussion

First, I will introduce the results for each independent variable and will summarize them in Tables 1.

The coefficient of the percentage of foreign shareholders is significantly positive in the chemical and land transportation and significantly negative in electronic product. However, this result does not guarantee that the change of percentage of foreign shareholders affects the change of the number of employees. The change of the employees one year after which is previously expected may affect the change of the percentage of foreign shareholders. For example, foreign shareholders may tend to actively invest firms which are expected to fire employees in the electronic products. In addition, foreign shareholders do not welcome for managers to hire more employees since the behaviors of foreign investors are friend to market. So, it is impossible that foreign shareholders demand to hire more employees in the chemical and land transportation industries. In next estimation, I carry out further examination in these industries. On the other hand, the coefficient of foreign shareholders is not significant in other industries. This implies that the relation of cause and effect between the change of the percentage of foreign shareholders and the change of the number of employees does not exist in these industries.

Next, I mention about other variables. The coefficient of ROA is significantly positive except the glass and wholesale industries. This implies that the number of employees increases if ROA becomes better. In this analysis, non-regular workers are considered. As the wholesale industry, since the number of non-regular workers is large, the effect of ROA may not be identified. Moreover, the coefficient of the change in capital intensiveness is significantly negative in the food, chemical, electronic products and

land transportation industries. This implies that the number of employees decreases since the productivity of the labor is improved. In addition, the coefficient of the logarithm of the number of employees is significantly negative except land transportation. This implies that firms whose number of employees is large must or can fire more employees. The coefficient of the change of sales is significantly positive in the chemical, glass, electronic and land transportation industries. The larger the sale of the firm is, the larger the number of employees is in these industries. However, the coefficient of the change of sales is significantly negative. From results of ROA, change of sales and logarithm of the number of employees, firms in the wholesale industry hire excessive the number of employees. Then, firms in this industry compete downsizing themselves. This is why firms whose sales are large decrease the number of employees. Lastly, the coefficient of the labor cost is not significant. So, it is supposed that the relation of cause and effect between the labor cost and the change of the percentage does not exist.

Table 1 Result 1

	food	chemical	glass	electronic	Land transportation	Warehousing	Wholesale
Constant	-6.191 11.51	-3.218 6.389	-20.05 86.35	-7.552 7.211	2.637 7.031	30.53* 14.97	307.5** 117.9
Capital ratio	0.012 0.020	0.028* 0.012	-0.118 0.113	0.022 0.013	0.037 0.028	-0.103* 0.045	0.048 0.125
Change in the degree of capital intensiveness	-0.082*** 0.023	-0.036* 0.014	-0.020 0.019	-0.024* 0.011	-0.059* 0.023	-0.051 0.052	-0.014 0.022
Percentage of foreign shareholders	-0.061 0.128	0.165** 0.064	0.078 0.204	-0.116+ 0.063	0.439* 0.201	0.398 0.330	-0.080 0.277
Labor costs per employee	0.626 0.768	0.225 0.409	6.545 5.005	0.536 0.471	-0.522 0.401	-1.376 1.015	-3.047 6.258
ROA	0.611*** 0.109	0.332*** 0.065	0.160 0.247	0.326*** 0.071	0.878*** 0.189	1.025* 0.405	0.430 0.454
Change in sales	-0.012 0.049	0.111*** 0.025	0.142* 0.058	0.095*** 0.021	0.204** 0.072	-0.058 0.111	-0.095* 0.047
Logarithm of the number of employees	-1.325*** 0.357	-0.781** 0.238	-11.71*** 3.116	-0.608** 0.223	-0.399 0.337	-1.676+ 0.954	-43.48*** 4.612
Subsidiary dummy	-0.826 2.280	3.231** 1.082	-3.849 4.199	0.916 0.895	0.714 2.217	-3.137 2.856	-2.116 5.096
Cross section effect	Random	Random	Fixed	Random	Random	Random	Fixed
Period effect	Random	Random	No	Random	Random	Random	No
Durbin-Watson stat	1.988	1.733	1.769	1.837	2.045	1.327	2.315
N	540	1017	279	1305	360	270	1224
Adjusted R-squared	0.119	0.123	0.266	0.071	0.223	0.034	0.099
F-statistic	10.12***	18.84***	3.654***	13.39***	13.84***	2.199*	1.940***

Notes: The upper rows denote the values of the coefficients. The lower rows denote the standard errors of the coefficients. ***, **, *, and + denote coefficients significant at the 0.1%, 1%, 5%, and 10% levels.

Next, I will estimate the Equation 2. In this equation, the dependent variable is the change of the percentage foreign shareholders. On the other hand, dependent variables are other valuables in the future such as the change of the number of employees one year after. In other words, the position of the change of the percentage of foreign shareholders and the change of the number of employees is the inverse of Equation 1. This estimation explains whether the change of the number of employees one year after affects the change of the percentage of foreign shareholders or not. I assume that the real numbers of data are equal to the number expected in one year after. As you see Equation 2, independent variables are the variable of the future. The variables in Equation 2 are most similar to Equation 1.

Equation 2

$$x_{it} - x_{it-1} = \delta_0 + \delta_1 z_{1,it} + \delta_2 (z_{2,it+1} - z_{2,it}) / z_{2,it} + \delta_3 (y_{it+1} - y_{it}) / y_{it} + \delta_4 z_{3,it} + \delta_5 z_{4,it} + \delta_6 (z_{5,it+1} - z_{5,it}) / z_{5,it} + \delta_7 z_{6,it-1} + \delta_8 \cdot D_{it-1,sub} + \kappa_i + \lambda_t + \varepsilon_{it}$$

κ_i : The firm dummy: cross section effect

λ_t : The time dummy: period effect

ε_{it} : Error term

Note: As other variables, see Equation 1.

I will introduce the results for each independent variable and will summarize them in Tables 2.

First, I introduce variables except change of the number employees one year after. The coefficient of ROA one year after is significantly positive in three industries. It implies that foreign shareholders actively invest the firm whose profitability of the future is high. In addition, the coefficient of the change of sales one year after is significantly positive in the electronic products industry. It implies that foreign shareholders actively invest the firm whose sale becomes bigger in the future in the electronic product industry.

Second, the coefficient of the change of the number of employees in the future is not significant in the chemical and land transportation. So, it is not thought that the change the number of employees in the future which is previously expected affect the change of the percentage of foreign shareholders. In addition, it is thought that foreign shareholders do not want for firms to hire more employees since they do not welcome higher labor cost. According to the result of table 1 and 2, it is thought that manager have confidence and decide to hire more employees if foreign shareholders invest in the chemical and land transportation. However, foreign shareholders do not welcome these manager's behaviors. Next, the coefficient of the change of the number of employees in the future is significantly negative in the electronic product. In addition, this significant level is higher than that in the coefficient of the change of the percentage of foreign shareholders at Table 1. So, it is thought that the change the number of employees in the future which is previously expected affect the change of the

percentage of foreign shareholders. According to the result of table 1 and 2, it is thought that foreign investor actively purchase stocks of firms whose the number of employees is going to decrease in the electronic product.

Table 2 Result 2

	chemical	electronic	Land transportation
Constant	-4.797+ 2.793	-4.362 3.011	-4.193* 1.822
Capital ratio (+1)	-0.004 0.005	0.002 0.006	-0.002 0.007
Change in the degree of capital intensiveness (+)	0.009 0.007	0.008 0.005	0.007 0.008
Change of the number of employees (+1)	0.027 0.016	-0.025* 0.013	0.019 0.019
Labor costs per employee (+1)	0.214 0.180	0.169 0.197	0.123 0.105
ROA (+1)	0.127*** 0.028	0.164*** 0.028	0.108* 0.048
Change in sales (+1)	0.018 0.013	0.026** 0.009	0.031 0.019
Logarithm of the number of employees	0.323** 0.103	0.281*** 0.093	0.347*** 0.084
Subsidiary dummy	-0.938+ 0.557	-0.172 0.435	0.130 0.633
Cross section effect	No	No	No
Period effect	Fixed	Fixed	Fixed
Durbin-Watson stat	2.186	2.348	2.056
N	1017	1305	360
Adjusted R-squared	0.139	0.143	0.166
F-statistic	11.23***	14.65***	5.452***

Note: See table 1.

4. Summary

The following is a summary of my analyses. The result implies that manager have confidence and decide to hire more employees if foreign shareholders invest in the chemical and land transportation. On the other hand, the result implies that foreign investor actively purchase stocks of firms whose the number of employees is going to decrease in the electronic product. However, in other industry, the relation of cause and effect do not exist between the change of the number of employees and the change of the percentage of foreign shareholders. After all, foreign shareholders themselves do not reduce the number of employees. This implies that the effect by foreign shareholders is limited.

Lastly, I will introduce the disadvantages of this paper and future issues. The conclusions in this paper need to be rethought since the number of employees mentioned in this paper are both regular and non-regular workers. Moreover, in this paper, I have not analyzed the effect of the labor unions on the change in the number of employees. For future research, the effect of the labor unions needs to be considered. In

addition, the date of data which is used in this paper is until March 2008. However, after then, a number of Japanese firm are forced to decrease the number of employees by the effect of financial crisis occurred at America. We have to study the relationship between the structure of governance such as foreign shareholders and the effect of this crisis. Moreover, we have to remember that the coefficient of foreign shareholders is not significant in many industries. This implies that institutions which protect managers from the pressure by foreign shareholder exist in Japan. It is thought that these institutions are Defense from Hostile TOB and revival of cross shareholding in recent years. These institutions are needed to be analyzed in the future.

References

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