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Ownership Structure and Equity Returns in Japan
－ **Effectiveness of market-oriented corporate governance** －

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Abstract

Abnormal returns related to ownership structure were evident in the early 2000s (especially from 2000 to 2006) in Japan's equity market. Firms with a more effective ownership structure in terms of market-oriented corporate governance gained higher equity returns after adjusting for the Fama-French 3 factor model and also momentum factor. This study also shows that a change in investor expectations with respect to improved corporate governance is one reason for abnormal returns.

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1. INTRODUCTION

In the early 2000s, after the collapse of the bubble economy and the subsequent financial crisis, the number of hostile takeovers increased as a result of reductions in cross-shareholdings. This background might have heightened investor expectations for improved market-oriented corporate governance, which means hostile takeover threats work as a check on corporate management. Improved corporate governance may reduce agency costs expected by investors and consequently increase equity value. Therefore, we analyze whether or not the corporate governance structure, especially ownership structure, influences abnormal stock returns.

Gompers *et al.* [2003] and Cremers and Nair [2005] show that corporate governance can affect equity value. Gompers *et al*. [2003] present one potential interpretation, namely that investors should have required additional agency costs for firms with weak shareholder rights. However, they estimated these costs at a lower level than they should have and the modification of these costs led to lower equity returns at firms with weak shareholder rights.

This paper can be summarized as follows. First, we ascertain higher abnormal equity returns in the early 2000s (2000-06) for firms with an ownership structure which is more effective for market-oriented corporate governance than vice versa. Then, we investigate the relationships between abnormal returns and ownership structure. We find a significant and positive relationship between equity returns and foreign ownership which is thought to enhance market-oriented corporate governance. We also find a significant and negative relationship between equity returns and corporate ownership which is thought to weaken market-oriented corporate governance. Finally, we examine several hypotheses as to the reason for abnormal returns and find that a change in expected agency costs for improved corporate governance could be one reason.

It is hoped that the following three aspects of this paper can contribute to the literature regarding corporate governance. First, in Japan in the early 2000s (2000-06) when investors expected an improvement in market-oriented corporate governance because of an increase in hostile TOBs, we find that firms with more effective ownership structures in terms of market-oriented corporate governance have higher returns. Second, following the basic analytical framework of Cremers and Nair [2005], we took the unique characteristics of Japanese ownership structure into account and clarified the relationships between it and

abnormal equity returns after adjusting for the Fama-French 4 factor model (hereinafter, 'FF4'). Third, we try to assign the cause of abnormal equity returns and find that they can be attributed to improved investor expectations toward corporate governance.

The paper proceeds as follows. We begin in Section 2 by over-viewing previous studies and describing our hypothesis and methodology. Section 3 explains our sample and data. Section 4 shows the results of abnormal equity returns and section 5 regression analysis results of the relationships between abnormal equity returns and ownership structure. Section 6 examines the robustness of our results. Then, section 7 discusses the interpretation of the results. Finally, we present our conclusions in section 8.

2. RESEARCH DESIGN

2.1 Hypothesis

Gompers *et al.* [2003] build a Governance Index for about 1,500 firms and then study the relation between this index and several forward-looking performance measures during the 1990s. They find a striking relationship between corporate governance and stock returns, and show that a 'democratic' company with strong shareholder rights and corporate governance outperformed a "dictatorship" like company with weak shareholder rights and corporate governance by 8.5% annually. Additionally, Cremers and Nair [2005] investigate interaction between corporate control and shareholder activism. In their study, they find that a portfolio that buys firms with the highest level of takeover vulnerability and sells firms with the lowest level of takeover vulnerability generates an abnormal return only when public pension fund (block holder) ownership is high as well.

Looking at corporate governance in Japan, we see that the main bank plays a key role. When a borrower's business is good, the main bank does not interfere in management. But, once a borrower's business situation deteriorates, it closely monitors things and provides a rescue plan. Moreover, when a borrower faces a financial crisis, the main bank controls management powers and decides whether to liquidate the business or to rebuild it. These relationships are defined as "governance depending on condition" by Aoki [1995]. However, parallel with the progress of the deregulation and liberalization of financial markets, the role of main banks diminished in the 1980s and 1990s. Osano and Hori [2002] hold that the growth potential of corporate and bank borrowings was negatively correlated in the late 1990s.

On the other hand, as the number of stable and cross-shareholding arrangements is declining in the Japanese equity market, expectations for improved market-oriented corporate governance are rising. The combined stock ownership of foreign, pension, and unit trust investors is increasing—from 14.3% in 1995, 27.1% in 2000, to 34.7% in 2005. The increased free float is considered to be one reason for increased hostile TOBs in the 2000s. **Table 1** shows hostile takeovers during 2000-07. Activists came to the forefront and several firms were targeted for hostile takeover. In January 2000, M&A Consulting (Murakami Fund) announced a hostile TOB for Shoei, and in 2003 and 2004 other activist funds such as Steel Partners and Dalton Investments announced hostile TOBs. After these events, Japanese firms also announced hostile TOBs for other firms. The hostile takeover by Livedoor of Nippon Broadcasting in January 2005 is one example.

Table 1: Hostile TOBs of Listed Firms in Japan, 2000-07

Date	Code	Target firm	Purchaser		Year	Total
Jan-00	3003	SHOEI	M&A Consulting		2000	1
Dec-03	3571	SOTOH	STEEL PARTNERS		2001	0
Dec-03	5013	YUSHIRO CHEMICAL IND.	STEEL PARTNERS		2002	0
(Aug-04)	8307	UFJ HOLDINGS	MITSUI-SUMITOMO FG		2003	2
(Sep-04)	4514	ASKA PHARMACEUTICAL	DALTON INVESTMENTS		2004	2
(Jan-05)	4660	NIPPON BROADCASTING	LIVEDOOR		2005	4
Jul-05	9626	JAPAN ENGINEERING	YUMESHIN		2006	5
(Oct-05)	9401	TBS	RAKUTEN		2007	6
Nov-05	6911	NEW JAPAN RADIO	MAC Asset Management			
Jan-06	7579	ORIGIN TOSHU	DON QUIJOTE			
Jul-06	3865	HOKUETSU PAPER MILLS	OJI PAPER			
(Aug-06)	9879	FUTATA	AOKI			
Oct-06	2900	MYOJO FOODS	STEEL PARTNERS			
Oct-06	8083	SUNTELEPHONE	JMBO FUND LTD （DALTON INVESTMENTS）			
(Feb-07)	2501	SAPPORO HOLDINGS	STEEL PARTNERS			
May-07	2804	BULL-DOG SAUCE	STEEL PARTNERS			
May-07	5945	TENRYU SAW MFG	STEEL PARTNERS			
May-07	8841	TOC	DA VINCI ADVISORS			
Oct-07	4663	ATL SYSTEMS	JAPAN ASIA HOLDINGS			
Oct-07	7602	SOLID GROUP HOLDING	KEN ENTERPRISE			

Dates in parentheses denote newspaper announcement of hostile TOB.

As the threats of (hostile) takeover rise, investors expect market-oriented corporate governance to become more effective for listed firms. It is possible that the agency costs anticipated by investors in a situation of a limited number of hostile takeovers are different from those in an environment of frequent hostile takeovers and improved market-oriented corporate governance. Gompers *et al.* [2003] present one potential interpretation for the performance difference—namely that agency costs expected by investors in the 1990s were lower than they should have been and the modification of these costs led to the relative underperformance of firms characterized by poor governance. As a result of increased hostile takeovers, investors expect firms whose ownership structure is more vulnerable to hostile TOB threats to have lower agency costs. This reduction in agency costs will mean higher abnormal equity returns than for firms whose ownership structure is less vulnerable to

hostile takeover threats. Therefore, we focus on ownership structure and investigate whether firms with different ownership structure generated different abnormal equity returns in the early 2000s in Japan.

Our specific hypothesis is: firms with a more effective ownership structure in terms of market-oriented corporate governance have larger abnormal equity returns than firms with a less effective ownership structure.

2.2   Methodology

To examine the hypothesis, we first calculate the abnormal returns of each sample firm based on FF4, then we create different types of portfolios based on the characteristics of ownership structure and examine the difference in abnormal returns between firms facing more potential hostile TOBs and vice versa. In addition, we conduct a multivariate regression analysis predicting abnormal returns depending on ownership structure.

2.2.1   Abnormal returns of each sample

We utilize FF4 to exclude market risk, size, valuation, and momentum factors (see Fama and French [1997], Jegadeesh and Titman [1993], and Carhart [1997]). *ALPHAi,t* in formula (1) is abnormal equity return, while *Ri,t* denotes one-week equity return on firm *i. MKTt, SMBt, HMLt,* and *UMDt* denote one-week portfolio returns in terms of the market, size, book-to-market ratio, and momentum, respectively. We estimate the β of each sample by regressing historical 52-week stock movements back from the December of each year and calculate firms' abnormal returns based on this β. We construct the portfolios and calculate two years (short term) and seven years (long term) cumulative abnormal returns starting from January. The reason why we start from January is because March is the fiscal year-end for most of the sample firms. For results announcements and updating databases we estimate around six months is required and then another three months for investor research. We use the short-term government note market rate for the risk-free rate (*Rf,t*). We use TOPIX weekly return less the risk-free rate as the proxy for *MKTt*. *SMBt* is the stock return difference between large-cap and small-cap TOPIX stocks, which are categorized based on end-December market capitalization. *HMLt* is the stock performance difference between the top 30% and bottom 30% book-to-market ratio stocks in TOPIX. *UMDt* is the equity return difference between the top 30% of stocks with the best performance historically and the bottom 30% of stocks with the worst performance historically in TOPIX from 52 weeks previous to four weeks previous. The data source for these figures is AMSUS.

$ALPHAi,t = Ri,t \ - \ Rf,t \ - \ (\ \beta 1i \cdot MKTt \ + \ \beta 2i \cdot SMBt \ + \ \beta 3i \cdot HMLt \ + \ \beta 4i \cdot UMDt)$
---------Formula （1）

2.2.2 Construction of categorized portfolio

Effective ownership structure in terms of market-oriented corporate governance is one that is composed of shareholders who sell stocks based only on the TOB price when there is a hostile TOB and who actively monitor management to improve equity value. McConnell and Servaes [1990] conducted empirical research on the relationships between ownership structure and Tobin's *q* and found that the more stock institutional shareholders hold, the higher Tobin's *q*. Nickell *et al.* [1997] studied about 580 UK manufacturing firms and discovered that those with a dominant external shareholder from the financial sector enjoyed higher productivity growth rates. These studies suggest that domestic institutional investors and foreign investors are good proxies for effective shareholders in terms of market-oriented corporate governance—however, it is difficult to obtain data on long-term domestic institutional investors in Japan because cross-shareholdings are included in such long-term data. Therefore, we use foreign ownership as a proxy for effective shareholders in terms of market-oriented corporate governance. Foreign investors are thought to be more active monitors and to pursue pure return rather than relationships. Iwatsubo and Tonogi [2006] showed that an increase in the foreign investor ownership ratio leads to an increase in firm value. Also, firms with relatively more foreign investors may feel more threat of a hostile TOB being successful as foreign investors will sell their shares based only on economic rationale.

Next, we consider Japanese specific factors with respect to ownership structure such as cross-shareholdings and stable (in Japanese, *antei*) shareholders (corporate ownership). Lichtenberg and Pushner [1994] conducted empirical research on the ownership structure and performance of Japanese firms from 1976 to 1989 and found that cross-shareholdings negatively affect productivity and return on assets. Recent statements by corporate shareholders suggest that sometimes they do not desire to pursue hostile TOBs out of consideration for their business relationships. Therefore, we use corporate ownership as a proxy for less effective shareholders in terms of market-oriented corporate governance. Because hostile TOBs function as a check on corporate management amid market-oriented corporate governance, an increase in corporate ownership will decrease the probability of hostile TOBs and negatively affect corporate governance effects.

Then, we construct portfolios based on differences in ownership structure. Both foreign ownership and corporate ownership are divided into four sub-groups: 1) the top 25%, 2) above the median but less than the top 25%, 3) above the bottom 25% but less than the median, and 4) the bottom 25%.

Then, each firm is categorized into one of $4\times4=16$ subsegments. We define a portfolio consisting of firms with a more effective ownership structure in terms of market-oriented corporate governance as an 'institutional portfolio' (firms in the highest quintile of foreign ownership and in the lowest quintile of corporate ownership), and that consisting of firms with a less effective ownership structure in terms of market-oriented corporate governance as a 'stable portfolio' (firms in the lowest quintile of foreign ownership and in the highest quintile of corporate ownership). **Table 2** shows the classification of the sample. Each value in this table represents an average number of observations from 2000 to 2006.

Table 2: Sample Classification

Table 2 shows the average number of observations in each portfolio from 2000 to 2006.   Both foreign investor ratio and corporate shareholder ratio are divided into four subgroups, 1) the top 25%, 2) above the median but less than the top 25%, 3) above the bottom 25% but less than the median, and 4) the bottom 25%. Then, each sample firm is categorized into one of $4\times4=16$ subsegments. We define a portfolio consisting of firms with a more effective ownership structure in terms of market-oriented corporate governance as an 'institutional portfolio' (firms in the highest quintile of foreign ownership and in the lowest quintile of corporate ownership), and that consisting of firms with a less effective ownership structure in terms of market-oriented corporate governance as a 'stable portfolio' (firms in the lowest quintile of foreign ownership and in the highest quintile of corporate ownership).

			Corporate shareholder ratio			
			Above top 25%	Above median and less than top 25%	Above bottom 25% and less than median	Less than bottom 25%
			High	←	→	Low
						Institutional portfolio
Foreign shareholder ratio	Above top 25%	High	31	51	79	149
	Above median and less than top 25%	↑	63	81	87	78
	Above bottom 25% and less than median	↓	89	85	81	52
			Stable portfolio			
	Less than bottom 25%	Low	115	93	66	30

2.2.3   Regression analysis of abnormal equity returns

We examine the relation between estimated abnormal returns and ownership structure using multivariate regression analysis. In the regression model shown as formula (2), we use abnormal return (*ALPHA*) estimated by FF4 as the dependent variable, and foreign ownership *(F_OWNER)* and corporate ownership (*C_OWNER*) as explanatory variables. Control variables are the capital ratio (*CAPITAL_R)* which is the ratio of equity divided by total assets, and return on equity *(ROE)* adjusted by the Tokyo Stock Exchange (TSE) 33 industry classification and industry dummy variables classified by TSE. Kawakita and Miyano [2007] mention that targeted firms by M&A Consulting (a Japanese activist fund) have a higher capital ratio and lower profitability (ROA, ROE).

Inoue and Kato [2007] show that activist funds tend to target low ROE firms.

$$ALPHA_{i,t} = \beta 1 \cdot F\_OWNER_{i,t-1} + \beta 2 \cdot C\_OWNER_{i,t-1} + \beta 3 \cdot CAPITAL\_R_{i,t-1} +$$
$$\beta 4 \cdot ROE_{i,t-1} + \beta 5 \cdot INDUSTRY\ DUMMY_{i,t-1} + C + \varepsilon \qquad \qquad \textit{---Formula (2)}$$

3. SAMPLE AND DATA

Our sample consists of firms listed on the TSE 1st Section (excluding financial institutions) from 2000 to 2006. There are 7,073 observations (Number of firms multiple number of years) with all data on abnormal equity return, ownership structure, and financial numbers. **Table 3** gives descriptive statistics. Of note is the correlation between foreign ownership and corporate ownership which is high at -34.9% with 5% significance which is not shown in the table.

Table 3: Descriptive Statistics

ALPHA denotes abnormal return estimated by FF4, F_OWNER foreign ownership, C_OWNER corporate ownership, CAPITAL_R the capital ratio which is the ratio of equity divided by total assets, and ROE return on equity adjusted by the TSE 33 industry classification.

	Mean	Median	Max.	Min.	SD	Skewness	Kurtosis	Observations
ALPHA	2.86	1.48	139.39	-131.55	42.36	0.12	3.46	7,073
C_OWNER	24.76	20.43	100.00	0.15	16.70	0.87	3.08	7,073
F_OWNER	8.27	4.45	78.23	0.00	9.81	2.18	9.80	7,073
ROE	-2.86	0.02	229.22	-533.63	23.08	-8.08	124.47	7,073
CAPITAL_R	0.42	0.40	0.99	-0.05	0.22	0.24	2.27	7,073

Note: We exclude outlier samples which are more than three standard deviations of divergence from the mean value for ALPHA, ROE, and Capital_R.

4. RESULTS OF ABNORMAL EQUITY RETURNS

4.1 Long-term (seven years) abnormal equity returns

First, we analyze abnormal equity returns for seven years in the early 2000s (2000-06). We compare the mean of abnormal returns between the 'institutional portfolio' and the 'stable portfolio'. **Table 4** gives results and the mean abnormal equity returns of the institutional and stable portfolio are 41.03% (*t*-statistic of 6.23) and 2.71% (*t*-statistic of 0.40), respectively. The difference is 38.32% (*t*-statistic of 4.04) with 1% significance.

In analyzing the impact of governance structure on stock returns, we also compare the mean of

abnormal returns of both portfolios (institutional and stable) for 1993-99. In this period, the difference in abnormal returns is not significant (*t*-statistic of 0.33). We see that the institutional portfolio creates abnormal returns in the early 2000s, which was not seen in the late 1990s.

Table 4:   Long-term Abnormal Returns of Each Portfolio

Below are the means of abnormal equity return of the institutional and stable portfolios for 2000-06 and 1993-99.

		2000-06				1993-99			
		Abnormal return (%)	*t*-statistic		NOB	Abnormal return (%)	*t*-statistic		NOB
Institutional portfolio (A)		41.03	6.23	***	120	-7.35	0.98		103
Stable portfolio (B)		2.71	0.40		106	-3.90	0.53		111
A-B		38.32	4.04	***		-3.45	0.33		
		*** denotes significance at the 1% level.							

NOB=Number of observations.

4.2   Short-term (two years) abnormal equity returns

To confirm the relevance and behavior of abnormal equity return means for the institutional and stable portfolios over the period 2000-06, we conduct a similar analysis for every two years. Also, we excluded firms that had been a target of M&A from 1996 to avoid the inclusion of M&A premium effects. The results are shown in **Table 5**. We find significantly different abnormal returns between the institutional portfolio and the stable portfolio in 2000-01, 2004-05, and 2005-06, at 15.98% (*t*-statistic of 2.52), 11.94% (*t*-statistic of 2.29), and 17.19% (*t*-statistic of 3.31), respectively. The results indicate a significant and positive difference between the institutional and stable portfolio in three out of six periods.

Table 5:   Short-term Abnormal Returns of Each Portfolio

Below are the means of abnormal equity return of the institutional and stable portfolios for every two years from 2000 to 2006.

	2000-01			2001-02			2002-03		
	Abnormal return (%)	*t*-statistic	NOB	Abnormal return (%)	*t*-statistic	NOB	Abnormal return (%)	*t*-statistic	NOB
Institutional portfolio (A)	18.88	4.28 ***	118	5.06	1.22	133	8.53	2.34 **	150
Stable portfolio (B)	2.90	0.64	103	-0.46	0.12	111	7.61	1.85 *	115
A-B	15.98	2.52 **		5.52	0.98		0.93	0.17	
	2003-04			2004-05			2005-06		
	Abnormal return (%)	*t*-statistic	NOB	Abnormal return (%)	*t*-statistic	NOB	Abnormal return (%)	*t*-statistic	NOB
Institutional portfolio (A)	0.53	0.19	160	-0.87	0.29	160	8.72	2.54 **	172
Stable portfolio (B)	2.83	0.51	111	-12.81	2.98 ***	129	-8.47	2.21 **	123
A-B	-2.30	0.37		11.94	2.29 **		17.19	3.31 ***	
	***,**, and * denote significance at the 1%, 5%, and 10% level, respectively.								

NOB=Number of observations.

5.   MULTIVARIATE REGRESSION ANALYSIS

5.1   Regression results for long-term abnormal equity returns

We perform a multivariate regression analysis to investigate the relationship between abnormal equity returns and ownership structure. First, we use long-term (seven years) abnormal equity returns, calculated in 4.1, as the dependent variable. We excluded outlier observations of more than three standard deviations of divergence from mean value. The results are shown in model 2 and model4 in **Table 6**. ROE, the capital ratio, and industry dummy are used as control variables. The coefficient of foreign ownership is 0.94 (*t*-statistic of 3.27) with 1% significance and the coefficient of corporate ownership is -0.27 (*t*-statistic of -1.77) with 10% significance. These results indicate that firms with a more effective ownership structure in terms of market-oriented corporate governance produce more positive abnormal equity returns and firms with a less effective ownership structure in terms of market-oriented corporate governance featured by more stable shareholders show negative abnormal equity returns.

Table 6:   Multivariate Regression Results for Long-term Abnormal Equity Returns

Below are multivariate regression results for long-term abnormal equity returns. In the regression model shown as a formula, we use long-term (seven years) abnormal equity return (ALPHA) estimated by FF4 as the dependent variable, and foreign ownership (F_OWNER) and corporate ownership (C_OWNER) as explanatory variables. Control variables are the capital ratio (CAPITAL_R) which is the ratio of equity divided by total assets, return on equity (ROE) adjusted by the TSE 33 industry classification, and industry dummy variables classified by TSE. Outlier samples of more than three standard deviations of divergence from mean value are excluded.

$$\text{ALPHA}_{i,t} = \beta_1 \cdot \text{F\_OWNER}_{i,t-1} + \beta_2 \cdot \text{C\_OWNER}_{i,t-1} + \beta_3 \cdot \text{CAPITAL\_R}_{i,t-1} + \beta_4 \cdot \text{ROE}_{i,t-1} + \beta_5 \cdot \text{INDUSTRY DUMMY}_{i,t-1} + C + \varepsilon \quad \text{---Formula}$$

	Model 1				Model 2				Model 3				Model 4			
	Coef	*t*-statistic	Prob.		Coef	*t*-statistic	Prob.		Coef	*t*-statistic	Prob.		Coef	*t*-statistic	Prob.	
F_OWNER	0.81	2.92	0.00	***	0.94	3.27	0.00	***								
C_OWNER									-0.26	-1.72	0.09	*	-0.27	-1.77	0.08	*
ROE					-0.07	-0.26	0.79						0.02	0.08	0.94	
CAPITAL_R					-20.84	-1.58	0.11						-13.20	-1.02	0.31	
C	10.82	0.71	0.48		20.22	1.23	0.22		26.87	1.75	0.08	*	34.00	2.01	0.04	**
NOB		1,001				1,001				1,001				1,001		
Adjusted R^2		11.5%				11.6%				11.0%				10.9%		
Durbin-Watson stat		2.10				2.10				2.10				2.10		
F-statistic		5.34				5.11				5.12				4.83		
Prob(F-statistic)		0.00				0.00				0.00				0.00		
	***,**, and * denote significance at the 1%, 5%, and 10% level, respectively.															

5.2   Regression results for short-term abnormal equity returns

We perform a multivariate regression analysis to investigate the relationship between short-term (two years) abnormal equity returns and ownership structure using two ways of regression.

First, we perform a multivariate regression analysis of formula (2) adding year dummy variables and pooling all the samples. The results are shown in **Table 7**. Panel A shows the effect of foreign ownership and panel B the effect of corporate ownership. Looking at model 3 of panel A, in which we use ROE, the capital ratio, and industry dummy and year dummy variables as control variables, the coefficient of foreign ownership is 0.18 (*t*-statistic of 3.33) with 1% significance. In model 3 of panel B, the coefficient of corporate ownership is -0.11 (*t*-statistic of -3.48) with 1% significance.

These results suggest that an effective ownership structure in terms of market-oriented corporate governance has a positive effect on abnormal equity returns and, to the contrary, stable ownership (corporate ownership) has a negative effect.

Next, we perform a multivariate regression analysis of formula (2) year by year and examine the coefficients of foreign and corporate ownership respectively. The results are shown in **Table 8**. Panel A shows the coefficients of foreign ownership for each year and panel B the coefficients of corporate ownership.

Looking at model 3 in panel A, in which we use ROE, the capital ratio, and industry dummy variables as control variables, the coefficient of foreign ownership is positive for all of six periods and significantly positive for two of them. The mean of all periods is 0.21 (*t*-statistic of 4.73) with 1% significance. On the other hand, looking at model 3 in panel B, the coefficient of corporate ownership is negative for five of six periods and significantly negative for two of them. The mean of all periods is -0.10 (*t*-statistic of -2.48) with 10% significance.

These results lead us to conclude that an effective ownership structure in terms of market-oriented corporate governance has a positive effect on abnormal equity returns and, to the contrary, stable ownership has a negative effect.

However, there are alternative explanations for these results. For example, another explanation is that foreign investors, who have more sophisticated research abilities, have simply just bought firms with bigger upside potential. In section 7, we discuss the possibility of other interpretations.

Table 7: Multivariate Regression Results for Short-term Abnormal Equity Returns (all samples pooled)

Below are multivariate regression results for short-term abnormal equity returns pooling all samples. In the regression model shown as a formula, we use short-term (two years) abnormal equity return (ALPHA) estimated by FF4 as the dependent variable, and foreign ownership (F_OWNER) and corporate ownership (C_OWNER) as explanatory variables. Control variables are the capital ratio (CAPITAL_R) which is the ratio of equity divided by total assets, return on equity (ROE) adjusted by the TSE 33 industry classification, and industry dummy variables classified by TSE and year dummy variables. Panel A shows the effect of foreign shareholders and panel B the effect of corporate shareholders. Outlier samples of more than three standard deviations of divergence from mean value are excluded.

$$\text{ALPHA}_{i,t} = \beta_1 \cdot \text{F\_OWNER}_{i,t-1} + \beta_2 \cdot \text{C\_OWNER}_{i,t-1} + \beta_3 \cdot \text{CAPITAL\_R}_{i,t-1} + \beta_4 \cdot \text{ROE}_{i,t-1} + \beta_5 \cdot \text{INDUSTRY DUMMY}_{i,t-1} + \beta_6 \cdot \text{Year DUMMY}_{i,t} + C + \varepsilon \quad \text{---Formula}$$

		Model 1				Model 2				Model 3		
		Coef	*t*-statistic	Prob.		Coef	*t*-statistic	Prob.		Coef	*t*-statistic	Prob.
P	F_OWNER	0.18	3.35	0.00	***	0.17	3.21	0.00	***	0.18	3.33	0.00 ***
a	ROE					0.03	1.50	0.13		0.04	1.66	0.10
n	CAPITAL_R									-2.46	-0.94	0.35
e	C	2.37	0.86	0.39		2.41	0.87	0.38		3.56	1.18	0.24
l	NOB		7,073				7,073				7,073	
	Adjusted R^2		2.77%				2.79%				2.79%	
	Durbin-Watson stat		1.88				1.88				1.88	
A	F-statistic		6.76				6.63				6.48	
	Prob(F-statistic)		0.00				0.00				0.00	

		Model 1				Model 2				Model 3		
		Coef	*t*-statistic	Prob.		Coef	*t*-statistic	Prob.		Coef	*t*-statistic	Prob.
P	C_OWNER	-0.11	-3.48	0.00	***	-0.11	-3.47	0.00	***	-0.11	-3.48	0.00 ***
a	ROE					0.04	1.77	0.08	*	0.04	1.82	0.07 *
n	CAPITAL_R									-1.01	-0.40	0.69
e	C	6.82	2.42	0.02	**	6.79	2.41	0.02	**	7.31	2.35	0.02 **
l	NOB		7,073				7,073				7,073	
	Adjusted R^2		2.78%				2.81%				2.80%	
	Durbin-Watson stat		1.88				1.88				1.88	
B	F-statistic		6.78				6.69				6.51	
	Prob(F-statistic)		0.00				0.00				0.00	

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

Table 8:   Multivariate Regression Results for Short-term Abnormal Equity Returns (each year sample)

Here we present multivariate regression results of the formula below with each period sample. We use short-term (two years) abnormal equity return (ALPHA) estimated by FF4 as the dependent variable, and foreign ownership (F_OWNER) and corporate ownership (C_OWNER) as explanatory variables. Control variables are the capital ratio (CAPITAL_R) which is the ratio of equity divided by total assets, return on equity (ROE) adjusted by the TSE 33 industry classification, and industry dummy variables classified by TSE. Panel A shows the effect of foreign shareholders and panel B the effect of corporate shareholders. Outlier samples of more than three standard deviations of divergence from mean value are excluded.

$$\text{ALPHA}_{i,t} = \beta_1 \cdot \text{F\_OWNER}_{i,t-1} + \beta_2 \cdot \text{C\_OWNER}_{i,t-1} + \beta_3 \cdot \text{CAPITAL\_R}_{i,t-1} + \beta_4 \cdot \text{ROE}_{i,t-1} + \beta_5 \cdot \text{INDUSTRY DUMMY}_{i,t-1} + C + \varepsilon \quad \text{---Formula}$$

						Model 1				Model 2				Model 3		
		Control variables				industry dummy				ROE, industry dummy				ROE, CAPITAL_R, industry dummy		
		From	To			Coef	Std.	*t*-statistic		Coef	Std.	*t*-statistic		Coef	Std.	*t*-statistic
P a n e l A	Coefficient of foreign shareholders	*2005*	*2006*	*		0.24	0.11	2.11 **		0.23	0.11	2.07 **		0.24	0.11	2.05 **
		2004	*2005*	*		0.17	0.13	1.25		0.16	0.13	1.17		0.13	0.14	0.93
		2003	2004			0.04	0.12	0.35		0.07	0.12	0.60		0.14	0.12	1.16
		2002	2003			0.23	0.12	1.91 *		0.29	0.12	2.36 **		0.42	0.12	3.39 ***
		2001	2002			0.27	0.13	2.06 **		0.23	0.13	1.75 *		0.13	0.13	1.00
		2000	*2001*	*		0.35	0.16	2.18 **		0.27	0.16	1.69 *		0.22	0.17	1.32
		Mean of total period				0.22	0.04	5.11 ***		0.21	0.03	6.36 ***		0.21	0.04	4.73 ***
		Mean of the year of significantly positive abnormal return				0.25	0.04	6.42 **		0.22	0.04	5.29 **		0.19	0.04	4.48 **
						Model 1				Model 2				Model 3		
		Control variables				industry dummy				ROE, industry dummy				ROE, CAPITAL_R, industry dummy		
		From	To			Coef	Std.	*t*-statistic		Coef	Std.	*t*-statistic		Coef	Std.	*t*-statistic
P a n e l B	Coefficient of corporate shareholders	*2005*	*2006*	*		-0.23	0.07	-3.27 ***		-0.23	0.07	-3.27 ***		-0.23	0.07	-3.27 ***
		2004	*2005*	*		-0.14	0.07	-1.88 *		-0.14	0.07	-1.92 *		-0.14	0.07	-1.89 *
		2003	2004			-0.11	0.07	-1.66 *		-0.11	0.07	-1.65 *		-0.11	0.07	-1.64
		2002	2003			-0.10	0.07	-1.39		-0.10	0.07	-1.47		-0.11	0.07	-1.62
		2001	2002			0.07	0.08	0.86		0.06	0.08	0.82		0.07	0.08	0.93
		2000	*2001*	*		-0.10	0.09	-1.12		-0.09	0.09	-1.01		-0.08	0.09	-0.95
		Mean of total period				-0.10	0.04	-2.58 **		-0.10	0.04	-2.60 *		-0.10	0.04	-2.48 *
		Mean of the year of significantly positive abnormal return				-0.16	0.04	-3.96 **		-0.15	0.04	-3.67 *		-0.15	0.04	-3.48 *

*Significantly positive return difference between the institutional portfolio and stable portfolio is shown for 2005–06, 2004–05, and 2000–01.

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

6. ROBUSTNESS TEST

To test the robustness of our results in section 5, we use shareholder dispersion dummy variables *(SH_DISPERSION_D)* instead of corporate ownership as the explanatory variable. In Japan, those having a more than 10% stake in a firm are deemed to be major shareholders. The shareholder dispersion dummy variable is equal to one if the top shareholder has less than 10% of shares outstanding, otherwise zero. A more dispersed ownership structure means a greater probability to be taken over. Therefore, it can be said to be an effective variable as a proxy for ownership structure in terms of market-oriented corporate governance. In the regression model using abnormal equity returns (*ALPHA*) as the dependent variable, the coefficient of shareholder dispersion dummy variables should be positive.

First, we perform a multivariate regression analysis of formula (2) adding year dummy variables and pooling all the samples. **Table 9** summarizes the results of these regression analyses. Looking at model 2, in which we use ROE, capital ratio, and industry dummy and year dummy variables as control variables, the coefficient of shareholder dispersion dummy variables is 2.65 (*t*-statistic of 2.48) with 5% significance. Additionally, we perform multivariate regression analysis year by year with each period samples. The average of the coefficient of shareholder dispersion dummy variables is significantly positive although the table is omitted. These results are consistent with the above results when we use corporate ownership as the explanatory variable.

Table 9:   Multivariate Regression Results for Short-term Abnormal Equity Returns (all samples pooled)

Here we present multivariate regression results of the formula below pooling all samples. We use short-term (two years) abnormal equity return (ALPHA) estimated by FF4 as the dependent variable, and shareholder dispersion dummy variables (SH_DISPERSION_D) and foreign ownership (F_OWNER) as explanatory variables. Shareholder dispersion dummy variables are equal to one if the top shareholder has less than 10% of outstanding shares, otherwise zero. Control variables are the capital ratio (CAPITAL_R) which is the ratio of equity divided by total assets, return on equity (ROE) adjusted by the TSE 33 industry classification, and industry dummy variables classified by TSE and year dummy variables. Outlier samples of more than three standard deviations of divergence from mean value are excluded.

$$ALPHA_{i,t} = \beta1 \cdot SH\_DISPERSION\_D_{i,t-1} + \beta2 \cdot F\_OWNER_{i,t-1} + \beta3 \cdot CAPITAL\_R_{i,t-1} + \beta4 \cdot ROE_{i,t-1}$$
$$+ \beta5 \cdot INDUSTRY\ DUMMY_{i,t-1} + \beta6 \cdot Year\ DUMMY_{i,t} + C + \varepsilon \qquad \text{---Formula}$$

		Model 1				Model 2			
		Coef	*t*-statistic	Prob.		Coef	*t*-statistic	Prob.	
SH_DISPERSION_D		2.74	2.60	0.01	***	2.65	2.48	0.01	**
F_OWNER		0.16	3.01	0.00	***	0.17	3.06	0.00	***
ROE		0.03	1.60	0.11		0.04	1.68	0.09	*
CAPITAL_R						-1.43	-0.54	0.59	
C		1.78	0.64	0.52		2.46	0.81	0.42	
NOB			7,073				7,073		
Adjusted R^2			2.87%				2.86%		
Durbin-Watson stat			1.88				1.88		
F-statistic			6.64				6.48		
Prob(F-statistic)			0.00				0.00		
		***,**, and * denote significance at the 1%, 5%, and 10% level, respectively.							

In addition, we also perform analysis based on floating stock (in Japanese, *fudo kabu*) and non-floating stock (in Japanese, *tokutei kabu*) instead of foreign and corporate ownership, respectively. The more floating stock there is, the higher the risk of a hostile TOB and higher abnormal equity returns. The more non-floating stock is, the lower the risk of a hostile TOB and negative abnormal equity returns. The multivariate regression analysis of formula (2) adding year dummy variables and pooling all the samples shows that the coefficient of floating stock is 0.11 (*t*-statistic of 2.09) and that of non-floating stock, -0.19 (*t*-statistic of -3.98), with 5% and 1% significance, respectively.

In summary, we support the hypothesis that firms with a more effective ownership structure in terms of market-oriented corporate governance have higher equity returns after adjusting for the Fama-French 3 factor model and also momentum factor in the early 2000s.

7. FURTHER DISCUSSION

Our results suggest that investors may change their expectation of agency cost for firms with improved corporate governance; however, these results admit of other interpretations. An alternative explanation is that foreign investors buy these stocks and the demand increase leads to abnormal equity returns. To examine this possibility, we perform multivariate regression analysis of formula (2) adding the fluctuation in foreign shareholder ratio for the next two years. It should be noted, however, that the increase in foreign ownership means not only an increase in demand for equity but also the increased probability of hostile TOBs and thus effective market-oriented corporate governance. **Table 10** shows the results. Looking at model 1, the coefficient of fluctuation in foreign ownership is 1.29 (*t*-statistic of 13.45) with 1% significance. Adjusting for the effect of increase in foreign ownership, the coefficient of foreign ownership is still 0.24 (*t*-statistic of 4.56) with 1% significance. Also, as shown in model 2, the coefficient of corporate ownership is -0.09 (*t*-statistic of -2.97) with 1% significance. These results suggest that, even if we control the effect of foreign investors increasing their shareholdings, foreign ownership positively affects abnormal equity returns and corporate ownership does so negatively.

Table 10: Multivariate Regression Results for Short-term Abnormal Equity Returns (all samples pooled)

Here we present multivariate regression results of the formula below pooling all samples. We use short-term (two years) abnormal equity return (ALPHA) estimated by FF4 as the dependent variable. The fluctuation in foreign shareholder ratio (FLUCT_F_OWNER), foreign ownership (F_OWNER), and corporate ownership (C_OWNER) are explanatory variables. Control variables are the capital ratio (CAPITAL_R) which is the ratio of equity divided by total assets, return on equity (ROE) adjusted by the TSE 33 industry classification, and industry dummy variables classified by TSE and year dummy variables. Outlier samples of more than three standard deviations of divergence from mean value are excluded.

$$\text{ALPHA}_{i,t} = \beta1 \cdot \text{F\_OWNER}_{i,t-1} + \beta2 \cdot \text{C\_OWNER}_{i,t-1} + \beta3 \cdot \text{FLUCT\_F\_OWNER}_{i,t-1} + \beta4 \cdot \text{CAPITAL\_R}_{i,t-1} + \beta5 \cdot \text{ROE}_{i,t-1} + \beta6 \cdot \text{INDUSTRY DUMMY}_{i,t-1} + \beta7 \cdot \text{Year DUMMY}_{i,t} + C + \varepsilon$$

--- Formula

	Model 1				Model 2			
	Coef	*t*-statistic	Prob.		Coef	t-statistic	Prob.	
F_OWNER	0.24	4.56	0.00	***				
C_OWNER					-0.09	-2.97	0.00	***
FLUCT_F_OWNER	1.29	13.45	0.00	***	1.24	12.94	0.00	***
ROE	0.02	1.11	0.27		0.03	1.33	0.18	
CAPITAL_R	-2.24	-0.87	0.38		-0.22	-0.09	0.93	
C	-2.29	-0.76	0.45		1.58	0.51	0.61	
NOB		7,073				7,073		
Adjusted R^2		5.21%				5.05%		
Durbin-Watson stat		1.87				1.87		
F-statistic		11.23				10.90		
Prob(F-statistic)		0.00				0.00		
	*** denotes significance at the 1%.							

Also, increased demand for some stocks by foreign investors may mean that these investors anticipate some changes in prospects for these stocks and/or they are undervalued in light of such prospects. From this, we conjecture that firms with a more effective ownership structure in terms of market-oriented corporate governance review and adjust their operating and financial activities to improve their prospects. We also conjecture that foreign investors, who have more sophisticated research abilities, buy stocks with excellent prospects, such prospects not being realized by other market participants To examine such conjectures, we analyze the relationships between change in ownership structure and change in prospects (change in profitability for the following two years). We use the same profitability variables as Cremers and Nair [2005], such as ROA, ROE, EBIT to sales ratio (ROS), and ROE using recurring profit. These profitability variables are industry-adjusted profitability change for the current year and two years ahead.

First, we examine the difference in profitability variables between the institutional portfolio and the stable portfolio. The results show that the institutional portfolio has lower ROA change than the stable portfolio for 2001-02 and 2002-03 with 1% significance. This means firms with a more effective ownership structure in terms of market-oriented corporate governance or firms with more sophisticated investors see lowered profitability. Apart from ROA, the other profitability variables do not show any significant difference between the institutional portfolio and the stable portfolio. These results indicate that a firm's ownership structure does not explain the improvement in prospects.

Then, we perform a multivariate regression analysis using each profitability variable as a dependent variable and foreign ownership as an explanatory variable. In the model using ROA change as a dependent variable, the coefficient of foreign ownership is significantly negative. This means that the larger foreign ownership is, the less profitability (ROA) change is observed. In the models using the three other profitability variables (ROE, EBIT to sales ratio [ROS], and ROE using recurring profit) as a dependent variable respectively, there are no significant relationships between them and foreign ownership. These results are similar to the results of analyses using either a pooled sample or each year sample. These relationships between foreign ownership and profitability variables mean that the improvement in their prospects is not explained by foreign ownership.

Assuming that investors may come to expect an improvement in corporate governance, we examine whether or not corporate management shifts to pursue policy which is more shareholder oriented. Here, we focus on dividend policy as management can change it relatively quickly. When we perform multivariate regression analysis using dividend increases as a dependent variable and foreign ownership as an explanatory variable, we find that the larger foreign ownership is, the greater the probability that corporate management increases the dividend significantly. It may be plausible that firms with a more effective ownership structure in terms of market-oriented corporate governance change their policy to be more shareholder oriented. These changes in corporate policy can reduce the agency cost estimated by investors.

Although it is impossible to directly calculate the expected agency cost of investors, it is arguably that a change in expected agency cost is one reason why we observe abnormal equity returns. We consider this to be the case on the grounds that ownership structure does not affect profitability change and firms with a more effective ownership structure in terms of market-oriented corporate governance change their dividend policy. In other words, investors expect to see reduced agency

cost for firms with a more effective ownership structure in terms of market-oriented corporate governance, which leads to buying demand from investors and abnormal equity returns.

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8. CONCLUSIONS

In this paper, we demonstrate that firms with a more effective ownership structure in terms of market-oriented corporate governance gained higher stock returns after adjusting for the Fama-French 3 factor model and also momentum factor in the early 2000s (especially during 2000-06) in Japan's equity market. We also estimated the relationships between abnormal equity returns and ownership structure. We find that foreign ownership has a significant positive effect on abnormal equity returns and corporate ownership a significant negative effect. As for reasons behind abnormal equity returns, we think that a change in investors' estimated agency cost could be one. That is, investors expect lower agency cost for firms with a more effective ownership structure in terms of market-oriented corporate governance as these firms become more shareholder oriented.

Further study can be pursued by changing the timing of portfolio constructions, performance measurement, and estimation period for each firm's beta. In particular, one could consider the portfolio construction period to reflect the effect of ownership structure, the following fiscal year's earnings information, and each of the FF4 factors. There is also room for further study of the effect on investors agency cost expectations caused by a change in shareholder structure.

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