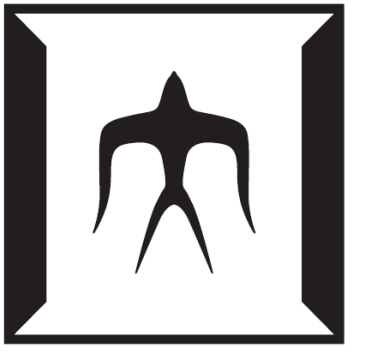


Effects and Causes of Time Gaps between English and Japanese Corporate Governance Reports of Japanese Public Firms

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Background

Foreign Investors

- They positively affect the performance of Japanese firms even after accounting for reverse causality^[1]
- They also show Foreign Shareholders (FS) play a disciplinary role as their shareholdings increase, which thereby increases the performance of firms

Corporate Governance Reports

- Tokyo Stock Exchange (TSE), owned by Japan Exchange Group (JPX), created the **CG code** in 2015 to promote better CG performance of public firms
- CG Code requires all firms to regularly release a Corporate Governance Report (CG Report) in Japanese, so CG information can be easily compared

Issue

- The TSE published a whitepaper in 2019 encouraging the disclosure of English CG Reports, particularly for firms with high foreign ownership levels
- In contrast, **the availability of the English CG reports was surprisingly low**

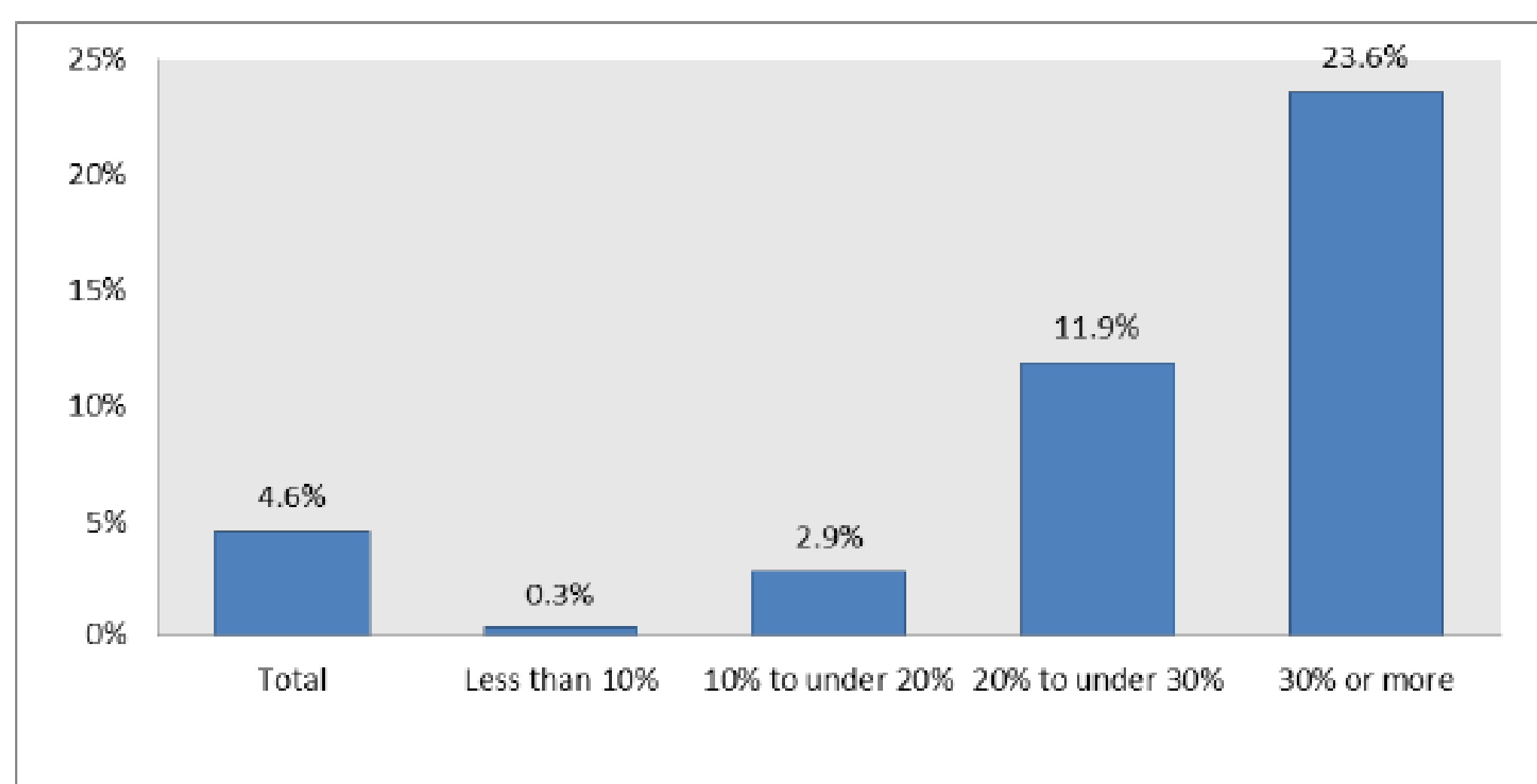


Figure 1: Release Ratio of English Version of CG Report (by Foreign Shareholding Ratio). Less than 5% of public firms have an English CG Report available^[1].

- Having **no English CG Report available is a source of information asymmetry for foreign investors** relative to domestic investors
- Market efficiency is limited, and firm value may not be properly reflected
- One consolation though, is foreign investors are typically blockholders
- Blockholders may have work-arounds to this information asymmetry
- Further investigation reveals **there usually exists a time gap in the release of the English version of the CG Report**, further increasing the information asymmetry which exists between domestic and foreign investors

Purpose

- Programmatically collect data on time gaps between the English and Japanese CG Reports being released (time gap data), as formal research on time gap data and English CG Reports has yet to be done
- Explain variation of time gap data using firm-level factors
- Explore effects of time gap data on firm-level factors
- Establish further research areas related to English CG Reports

Method

Data

- **Corporate Governance Information Search database** on JPX website for Time gap data, collected via web data extraction
- Python script created to navigate JPX website, extract upload dates of all English CG and Japanese CG reports, parse Japanese and English Reports for intended reporting period, match the reports, record their time delays
- Main libraries used: Selenium, Requests, BeautifulSoup, Pandas, and Regex
- **Quick Workstation Astra Manager** for firm-level factors: classification, corporate governance, and financial details

Analyze

- Univariate analysis on time gap data
- Non-parametric tests were conducted given non-normal distribution
- With support from the non-parametric tests, parametric regression models fitted to maximize R² while minimizing multicollinearity
- **Variable of interest added last to see how the factors change**
- Factors were scaled downwards or time lagged to avoid undue influence and endogeneity concerns (time gap, FS Ratio, non-ratio factors)
- Tested Controls: Outside Director Ratio, Total Assets, CapEx, RnD, Market Cap, Debt-Equity, EV/EBITDA, Industry fixed effect, year fixed effect
- Main libraries used: Matplotlib, Pandas, Statsmodel, Scipy

References

[1] Hideaki Miyajima, Takaaki Hoda, Ryo Ogawa. Does Ownership Really Matter? : The Role of Foreign Investors in Corporate Governance in Japan. 2016. {halshs-01643915}

Result/Findings

- 2015 – 2019: Approximately 1300 English CG Reports released by 250 firms
- 1216 English CG reports after filtering outliers and joining with firm data
- 39% (476) English Reports have positive time gap

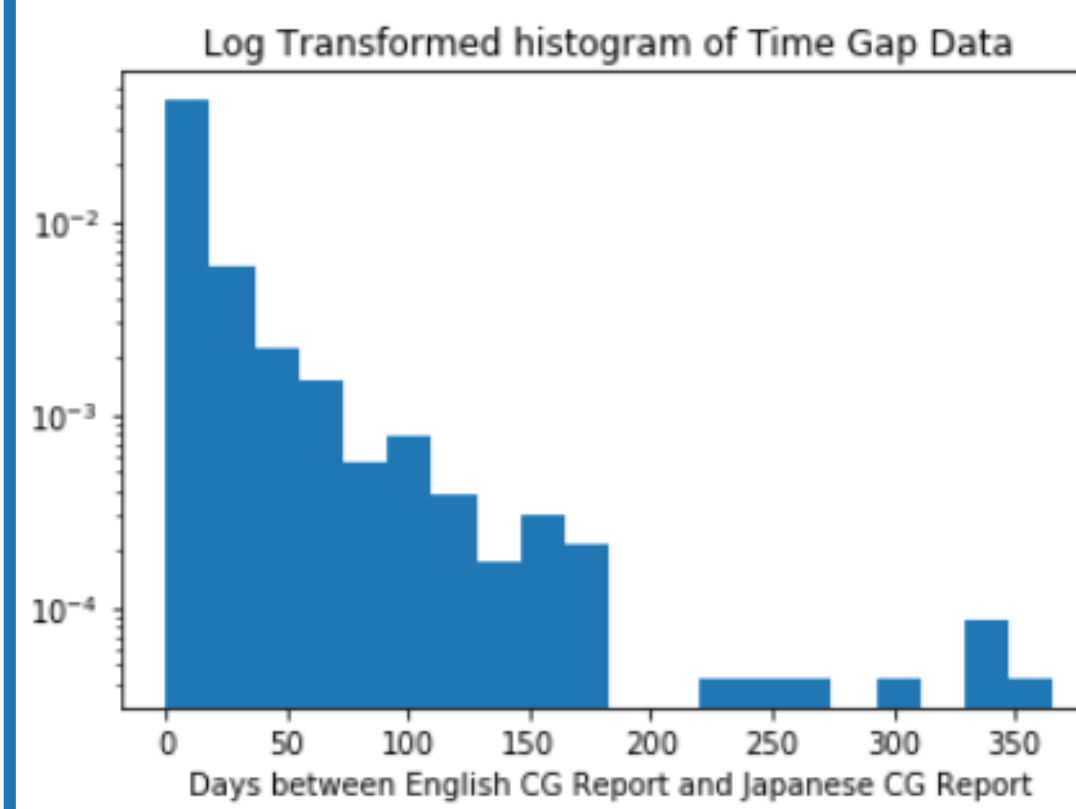


Figure 2: Log transformed time gap data is non-normal distribution

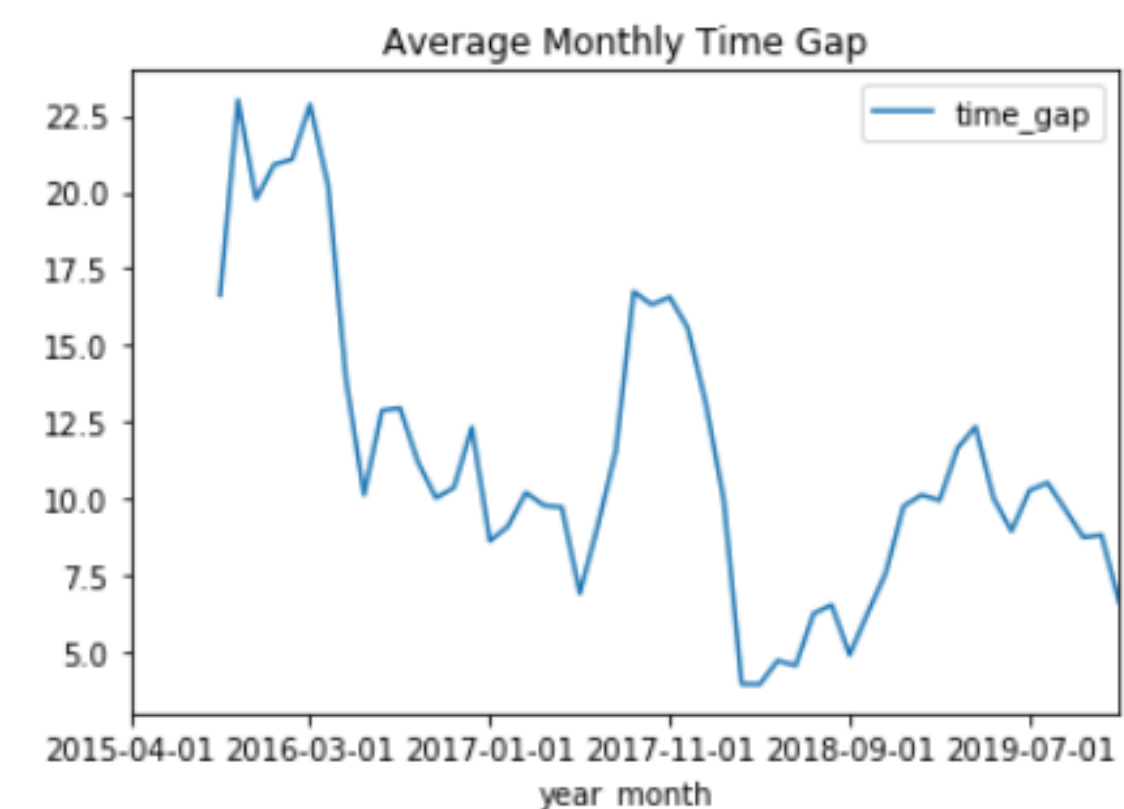


Figure 3: 6 month rolling average of time gap data

Time Gap	Key	
big (>= 30)	193	40.5%
med (>= 10)	132	27.7%
small (<10)	151	31.7%
Total	476	

Table 1 & 2: Time Gap and foreign ownership data classification.

Foreign Ownership	Key	
high (> 30)	662	54.4%
med (> 10)	510	41.9%
low (<= 10)	44	3.6%
Total	1216	

- Omnibus test of normality → Non-normal distribution at 1% level
- Firms are making efforts to produce more timely English CG Reports (fig 3)

Non-Parametric Tests on Time Gap and Foreign Ownership

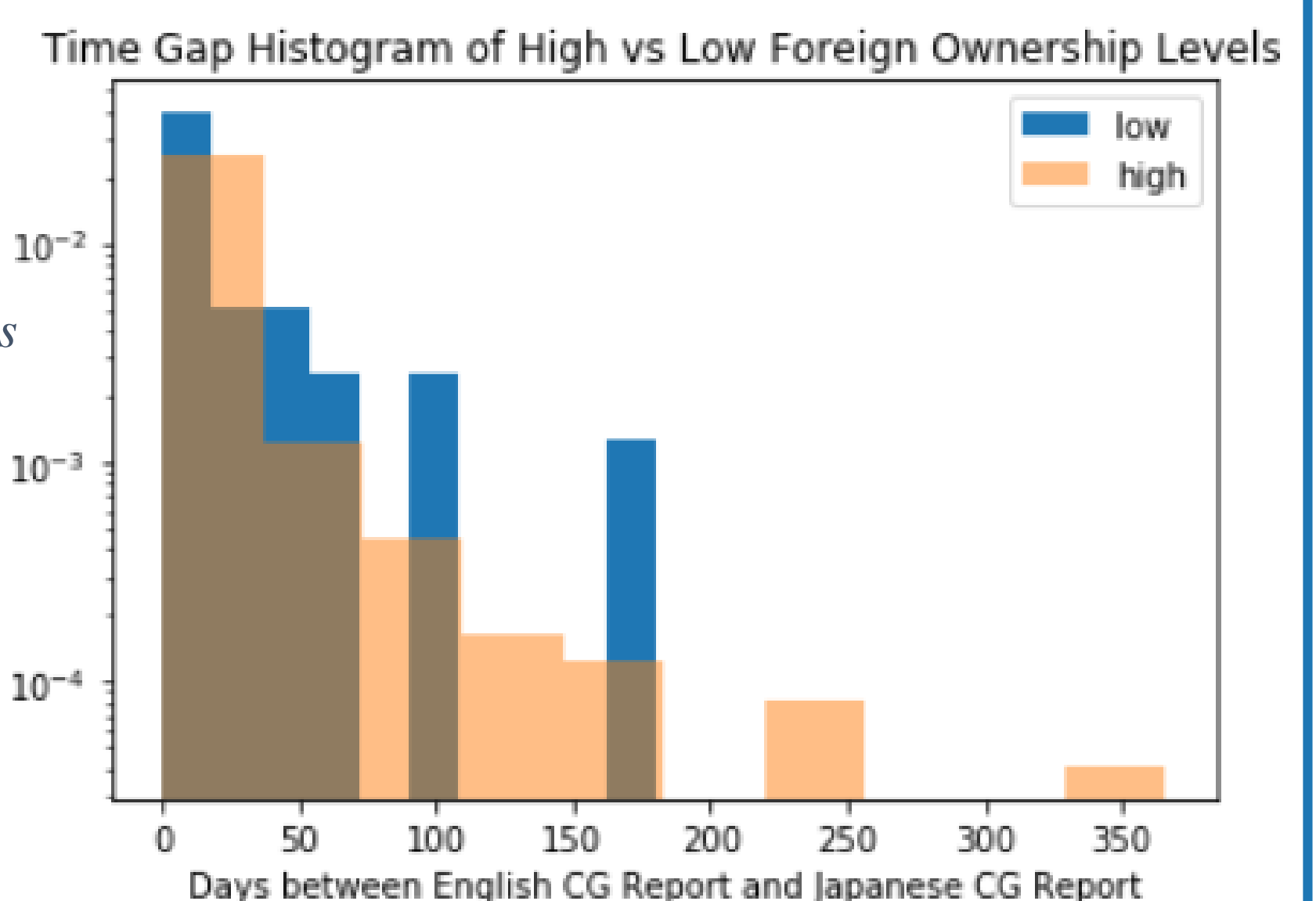
- Time gap data was bucketed by Foreign Ownership level and compared

Foreign Ownership				
Time Gap Size	high	med	low	Total
small	86	62	3	151
med	67	59	5	131
big	74	108	11	193
Total	227	229	19	475

Tables 3: Contingency Table for Foreign Ownership vs Time Gap

Foreign Ownership				
Time Gap Size	high	med	low	
small	37.9%	27.1%	15.8%	
med	29.5%	25.8%	26.3%	
big	32.6%	47.2%	57.9%	
Total	100%	100%	100%	

Figure 4: Log transformed time gap data for firms with high vs low foreign ownership levels



- Pearson Chi-Squared test → dependence of variables at 1% level (table 3)
- Kolmogorov-Smirnov test → distributions same even at 10% level (fig 4)
- Conflicting test results mean more work needed to conclude relationship

Parametric Regression (OLS controlling for industry and time fixed effect)

- **Model A** → increase in FS ratio in previous year *decreases* time gap at 5% level; R² increased from 20.7 to 21.6 (table 5)
- **Model B** → decrease in time gap in previous year *does not affect* FS ratio even at 10% level; R² unchanged from 37.8 to 37.9 (table 6)
- Endogeneity concerns addressed on foreign ownership affecting time gap

Dep. Variable:	Log(Time Gap + 1)	R-squared:	0.216
Model:	OLS	Adj. R-squared:	0.172
No. Observations:	555	F-statistic:	4.825
Df Residuals:	524	Prob (F-statistic):	1.31E-14

	coef	std err	t	P> t
Intercept	2.27	0.35	6.43	0.000
FSratio	-0.01	0.01	-2.45	0.014
Outside Director Ratio	-0.02	0.01	-4.04	0.000
Scaled RnD	-0.03	0.01	-4.08	0.000

Table 4: Model A

$$FSratio = Time\ Gap + Control + fixed + e$$

Dep. Variable:	FSratio	R-squared:	0.379
Model:	OLS	Adj. R-squared:	0.336
No. Observations:	516	F-statistic:	8.902
Df Residuals:	482	Prob (F-statistic):	1.35E-32

	coef	std err	t	P> t
Intercept	28.31	3.94	7.19	0.000
Log(Time Gap + 1)	-0.24	0.28	-0.84	0.402
Outside Director Ratio	0.16	0.04	4.09	0.000
Log(Scaled Assets)	-2.58	1.15	-2.25	0.025
Log(Scaled Market Cap)	5.27	0.77	6.85	0.000
Log(Scaled Capex)	1.44	0.80	1.80	0.072
Scaled RnD	-0.13	0.07	-2.00	0.046

Table 5: Model B

$$Time\ Gap = FSRatio + Control + fixed + e$$

- Findings are intuitive
- Potential foreign investors must consider factors beyond the CG Report
- Foreign shareholders likely monitor firm performance regularly and so, would demand an English CG report
- Alternatively, demands of shareholders likely outweigh potential investors
- More effective and assertive avenues exist for increasing foreign ownership than producing an English version of their CG reports

Conclusion and Future Tasks

- An automated method to gain access to data related English and Japanese CG Reports, namely time gap data and the CG Reports themselves
- Time gap data has non-normal distribution
- Increase Foreign ownership decreases time gap, but reverse untrue

Future:

- Analyze firms with English CG Reports vs firms without
- Analyze differences between English and Japanese CG Reports beyond time gap (for example the possible differences in content)
- Consider other ways Foreign Shareholders can obtain information not easily available in English in Research and investigate economic significance

[2] TSE-Listed Companies White Paper on Corporate Governance 2019. (2019, May). Retrieved December 13, 2019, from <https://www.jpx.co.jp/english/equities/listing/cg/tvdivq0000008jb0-att/b5b4pj000002xyj7.pdf>