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Abstract

We address a gap in prior literature on female managerial representation and corporate performance. Prior evidence linking increases in female managerial representation to corporate performance has been surprisingly mixed, due in part to data limitations and methodological difficulties. Using panel data from Japan, we are able to address several of these prior challenges. With the help of a nationally representative sample of Japanese firms covering the 2000s, we find that increases in the female executive ratio, employing at least one female executive, and employing at least one female section chief are associated with increases in corporate profitability in the manufacturing sector. Employing a female executive appears particularly helpful to corporate performance for the Japanese affiliates of North American multinationals. The results are robust to controlling for time effects and company fixed effects and the time-varying use of temporary and part-time employees. Part of the competitive benefit to employing female managers is shown to come from compensation savings, in line with Becker's economic theory of discrimination.

Key words: Female managerial representation; Corporate performance; Discrimination; Wage differentials.
JEL classification: J71 – Discrimination; J31 - Wage Level and Structure; Wage Differentials

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I. Introduction

Can hiring the excluded group, typically women, as senior executives and middle-level managers in the labor market help firms to become significantly more profitable? Despite Becker's (1957/1971) groundbreaking theoretical prediction more than five decades ago that firms would see higher profitability from actively employing the excluded group, the extant empirical evidence on this question has been mixed, mostly due to data and methodological limitations of prior studies. For example, in the U.S. context, Deszo and Ross (2009) reported that having a female CEO had a negative effect on corporate performance among U.S. companies, but that having a top-five female executive had a positive effect when U.S. companies that chose not to report R&D expenditures were excluded. Szymanski (2000) in turn showed that English soccer-league clubs with a higher proportion of black players outperformed other clubs on the playing field, even after controlling for the wage bill. The latter finding is an encouraging result for our study, but the question remains whether sports-league owners, who often derive most of their earning from business activities in other industries, are an extreme case and are much less likely to be profit-maximizing with their sports business.

Also, the best-known study from Japan analyzing the effect of female workers on corporate performance in Japan had inconclusive results. Specifically, Kawaguchi (2007) found a profit benefit from having a higher proportion of female workers in Japan in the 1990s, but the firms that hired women did not grow faster over time and only 5 % of the profit effect was due to gender discrimination. The remaining question about this study draws on Houseman and Abraham (2001), who showed that female workers in Japan were significantly more likely to be temporary workers. Thus it could be that the profit benefit attributed to the proportion of female labor in Kawaguchi's study was conflated with the effect of an increase in temporary workers as

a percentage of all workers. Kodama et al. (2005) found that the total ratio of female employees did not have an impact on corporate profitability after controlling for part-time workers. That latter study, however, did not look at the effect of female leaders/managers on performance.

Without clear empirical evidence on Becker's profitability prediction and the mechanism behind it, many executives in Asia we have interviewed continue to believe in an alternative view from sociology that homogeneous leadership groups can be maximally efficient, particularly in markets like South Korea and Japan where men have traditionally been viewed as more effective corporate and political leaders (Siegel, Pyun, and Cheon, 2011).

This paper utilizes Japanese government data that can help to deal with the prior data limitations. Unlike prior studies, we can separately examine the effect of employing women in leadership positions as well as in lower-level positions. Unlike prior studies on Japan and elsewhere, we can control for the cost savings that come from the fact some firms use more part-time workers than others and women are more likely to be part-time workers. Unlike prior studies which had a difficult time showing the mechanism through which hiring female managers helps firms to become more profitable (with the exception of our prior work in Siegel, Pyun, and Cheon, 2011), we are able to show that in Japan at least a principal mechanism is indeed through cost savings in the managerial labor market. And we are able to corroborate the idea in Siegel, Pyun, and Cheon 2011 that large foreign multinationals are an instrument of change in the Japanese labor market and are serving to tip the labor market towards a new equilibrium that is somewhat freer of gender discrimination.

Using a complementary set of internal databases from the Japanese government on demography in Japanese firms, we test for the 2000s that employing female managers leads to higher performance. Section II outlines the Japanese labor market context for female executives

and managers. Section III describes the data, models, and results. Section IV discusses some robustness issues and draws some conclusions.

II. Japanese Context for Female Managers and Employees

Japan is one of a large number of countries from Asia, the Middle East, Africa, Latin America, and even parts of southern Europe where there is a sharp gender disparity in the managerial labor market. One can view this either from the perspective of representation in the labor market or in terms of pay disparity. We will focus our attention first on the year 2005, which represents the middle of our sample time period. In terms of labor market participation, Japan's female labor participation rate was 48% in 2005 according to the World Bank's World Development Indicators (WDI) database, which ranks Japan above Spain (46%), Italy (38%), and Belgium (46%), and above a wide cross-section of emerging and transition economies in Latin America, Africa, Asia, and Eastern Europe (including most prominently Mexico, Chile, South Africa, Nigeria, all of the Arab countries, India, and Poland), and just slightly below France (50%), Argentina (50%), Germany (51%), Hong Kong (52%), and Singapore (54%). Similarly, the female percentage share of all professional and technical workers in Japan stood at 46% in 2005, according to the United Nations Development Programme's (UNDP's) 2007/08 Human Development Report (which utilized data from Year 2005), and that 46% figure was comparable to the female shares in Hong Kong (40%), Malaysia (40%), Mexico (42%) and Singapore (44%), the same as in Italy (also 46%), and just below that of Spain (48%) (Watkins, 2007).

The story for Japan when one looks at the gender wage gap is similar: the country is one of a large number of countries with a comparable large gender wage gap. The ratio of estimated

female to male earned income in Japan according to the UNDP's Human Development Report was 0.45 in 2005, which is comparable to Italy (0.47). It is also similar to the comparable value for Chile (0.40), Mexico (0.39), and Malaysia (0.36). Data from the United Nations' Statistics Division encompassing the mid to late 2000s shows that women's wages in manufacturing as a percentage of men's wages in Japan was 61%, which was similar to that of Colombia and Hong Kong (both 60%), Brazil (also 61%), and Austria (62%), along with being higher than a broad range of other emerging and transition economies. The above-referenced UNDP Human Development Report, again using data from 2005, presents an overall index of female activity that placed Japan with a score of 66%, which is similar to South Korea (with its score of 68%), Italy (62%), Singapore (66%) and Spain (66%) (Watkins, 2007). Japan ranked on the UNDP's index only moderately higher than Chile (52%), Mexico (50%), and Malaysia (57%) (Watkins, 2007). In summary, the picture is of a Japan with significant gender disparities, but disparities that don't place Japan as an outlier but rather as one of many with a comparable level of potentially severe gender discrimination.

Rosenbluth (2007) shows together with a team of sociologists and political scientists that Japanese institutions do continue to hold women back in the labor market. For example, labor market institutions make it easier for firms to rely on relatively cheap part-time and temporary labor, where the labor is more often than not coming from women. In response to a labor market that shuts off opportunities when women marry or give birth to children, Japanese women have been shown to more and more often delay or even avoid marriage and childbirth as a result (Rosenbluth, 2007).

III. A Market Test of Gender Disparity in Japan

III.1 Data

We combine data from three data sets gathered repeatedly over time by the Government of Japan. The Establishment and Enterprise Census (EEC) is conducted twice every five years targeting all private and public establishments (about six million) and covers every industry in Japan. EEC includes data on the number of male and female executives per establishment. We then aggregated that information on the number of both female executives and all executives up to the company level. We then imported company financial variables from the Basic Survey of Japanese Business Structure and Activities (BSJBSA). EEC and BSJBSA samples were merged when they had the same company name and postal code, or the same company name and phone number.

From the underlying observation in the years of 2001, 2004, and 2006 count of 84,291 in the BSJBSA, we found that 59,041 could be successfully merged with EEC. We find that this approximates a random sample of the original BSJBSA in terms of profitability and multiple other characteristics.[4] BSJBSA is conducted by the Ministry of Economy, Trade and Industry (METI) every year targeting firms in the manufacturing, commerce and some service industries. The survey excludes some service industries such as finance, real estate, hospital and schools. In addition, as the survey only targets firms which have 50 or more employees and 30 million yen or more capital, small-sized firms are not included. The BSJBSA data include information on ROA (operating profit/total assets), total assets (for which we take the log when running regressions), the foreign ownership ratio, the debt/asset ratio, the export/revenue ratio, the R&D

[4] The average ROA of sample companies in our analysis is 0.039, while that of pre-matched samples is 0.037. The average number of employees of sample companies in our analysis is 345 employees and the average revenue is 18,698 million yen, while 415 employees and 23,107 million yen for all companies in BSJBSA respectively.

expenditure/revenue ratio, the advertising expenditure/revenue ratio. We utilize data from the available survey years from the 2000s, representing specifically the years 2001, 2004, and 2006.

Then in order to study the effect of upper-middle-level female managers on corporate managers, we utilized data from the Basic Survey on Wage Structure (BSWS). The BSWS utilizes the following stratified sampling to sample the broad population of Japanese establishments. In getting a sample that reflects the broader Japanese economy by both industry and establishment size distribution, the BSWS involves taking 70,000 establishments randomly (except for fulfilling quotas on industry and size) from the total of six million establishments in the EEC data. It then takes a random sample of employees at those 70,000 establishments. We aggregate the number of female managers and all managers of establishments affiliated to the same company and then calculate the female manager percentage of each firm, by assuming based on our knowledge of the data collection that female managers are randomly reflective of the actual number of female managers over total managers at these firms.[5] Because the random sampling must lead to some random imprecision in measurement, this should bias the female manager percentage variable against our finding any result.

The data aggregated to the firm level was merged with the BSJBSA data to assess the effect of female upper-middle-level managers on corporate performance. (The current Tables 6-8 report results using firms where EEC data are also available.) Managers here included section heads (ka-cho) and division heads (bu-cho). As BSWS is a survey that relies on sampling the broader population of firms, the resulting sample with available financial variables consists of

[5] To be more precise, this is how we calculate the female manager ratio: We first calculate the number of female managers of each establishment through multiplying the number of female managers reported in BSWS by the inverse number of the sampling ratio. We do the same for the number of all managers. We then aggregate the number of female managers and all managers to the firm level and calculate the female manager ratio of each firm.

4,800 observations. We utilize data from the available survey years from the 2000s, representing specifically the years 2001, 2004, and 2006.

III.2 Models

We first model the following fixed-effects panel OLS equation:

(1) ROA_{kt} = a + b (Female Executive Ratio [or Having At Least One Female Executive, Having At Least One Female Section Chief, etc.]$_{kt}$) + c (Total Female Employee Ratio$_{kt}$) + d (((Part-Time + Short-Term Workers)/Total Permanent Employees)$_{kt}$) + e ((Log(Assets))$_{kt}$) + f (Foreign Ownership Percentage$_{kt}$) + g (Leverage$_{kt}$) + h (Foreign Sales Ratio$_{kt}$) + i (R&D Intensity$_{kt}$) + j (Advertising Intensity$_{kt}$) + Firm$_k$ + Year$_t$,

where the dependent variable represents firm *k*'s ROA winsorized at the .01/99.9 level at time *t*,[6] and the independent variables include the firm's female executive ratio (or alternatively, another variable or set of variables for female representation in management) at time *t*, the firm's total female employee ratio at time *t*, the firm's ratio of (part-time + short-term workers)/total permanent employees at time *t*, the firm's natural log of assets at time *t*, the firm's foreign ownership percentage at time *t*, the firm's leverage at time *t*, the firm's foreign sales ratio at time *t*, the firm's R&D intensity at time *t*, the firm's advertising intensity at time *t*, firm fixed effects, and year dummies. We also run a variation on this model with an interaction term between having at least one female executive and being a North American multinational with a subsidiary in Japan.

[6] The winsorization of the few extreme values was done by taking the distribution of ROA values from the combined three-year panel.

We then model the following dprobit equation showing marginal effects of the independent variables on the dependent variable:

(2) Having At Least One Female Section Chief$_{kt}$ [or, alternatively, Having At Least One Female Division Chief$_{kt]}$ = a + b (Majority Foreign Ownership$_{kt}$) + c ((Log(Assets))$_{kt}$) + d (Leverage$_{kt}$) + e (R&D Intensity$_{kt}$) + f (Advertising Intensity$_{kt}$) + Industry$_{y}$ + Year$_{t}$,

where the dependent variable represents firm *k*'s having at least one female section chief (or, alternatively, at least one female division chief) at time *t*, and the independent variables include whether the firm is majority-foreign-owned at time *t*, the firm's natural log of assets at time *t*, the firm's leverage at time *t*, the firm's R&D intensity at time *t*, the firm's advertising intensity at time *t*, industry fixed effects, and year dummies.

We then utilize the individual-level panel data on wages to model each individual's wage:

(3) Wage per Hour$_{pijct}$ = a + b (Is Female$_{pijct}$) + c (Tenure$_{pijct}$) + d (Tenure Squared$_{pijct}$) + e (Years Since College or Less-Than-College Graduation$_{pijct}$) + f (Years Since College or Less-Than-College Graduation Squared$_{pijct}$) + g (Part-Time Job Dummy$_{pijct}$) + h (Education Dummies$_{pijct}$) + k (Region Dummies$_{pijct}$) + Firm$_{c}$ + Job-Year$_{jt}$ + Industry-Year$_{it}$,

where the dependent variable is wage per hour for person *p* in industry *i* in job *j* in company *c* at time *t*, and the independent variables include an indicator variable for being female, job tenure, job tenure squared, years since college graduation, years since college graduation squared, an indicator variable for the job being a part-time job, an indicator variable for junior high school-only education, an indicator variable for two-year college/special training school-only education, an indicator variable for four-year college education, an indicator variable for the person's prefecture being Tokyo, an indicator variable for the person's prefecture being Kanagawa, an

indicator variable for the person's prefecture being Osaka, firm fixed effects, job title-year fixed effects, and industry-year fixed effects.

We then model the following fixed-effects panel OLS equation explaining productivity:

(4) $\text{Log(Gross Profit)}_{kt} = a + b\,(\text{At Least One Female Executive}_{kt}) + c\,(\text{Natural Log of Total Employees}_{kt}) + c\,(\text{Natural Log of Fixed Assets}_{kt}) + d\,(\text{Natural Log of Cost of Goods Sold/COGS}) + e\,(\text{Total Female Employee Ratio}_{kt}) + f\,(((\text{Part-Time + Short-Term Workers})/\text{Total Permanent Employees})_{kt}) + g\,(\text{Foreign Ownership Percentage}_{kt}) + h\,(\text{Leverage}_{kt}) + i\,(\text{Foreign Sales Ratio}_{kt}) + j\,(\text{R\&D Intensity}_{kt}) + k\,(\text{Advertising Intensity}_{kt}) + \text{Firm}_{k} + \text{Year}_{t},$

where the dependent variable represents firm *k*'s natural log of gross profit at time *t*, and the independent variables include the firm's having at least one female executive at time *t*, the firm's natural log of total employees at time *t*, the firm's natural log of fixed assets at time *t*, the firm's natural log of cost of goods sold (COGS) at time *t*, the firm's total female employee ratio at time *t*, the firm's ratio of (part-time + short-term workers)/total permanent employees at time *t*, the firm's foreign ownership percentage at time *t*, the firm's leverage at time *t*, the firm's foreign sales ratio at time *t*, the firm's R&D intensity at time *t*, the firm's advertising intensity at time *t*, firm fixed effects, and year dummies.

We then conclude by showing that the results from Equation (1) above are robust to controlling for different definitions of a Japanese firm's general deviation from post-World War II human resource management norms. As an initial proxy, we take Equation (1) and control further for the estimate ratio of mid-career hires (estimated as 1 – (those whose work experience at the company is more than three years different from their total working years/total company employees) the estimated ratio of mid-career employees. This proxy focuses on the firm's time-

varying approximate deviation from standard labor-market-entry-point hiring and accompanying lifetime employment practices in Japan. Then we use eight alternative proxies for the firm's deviation from seniority-based pay. In each of those eight proxies, we run regressions on the individual-level wages to see how much residual there is for each individual. Then we take the results from that individual-level regression analysis and calculate the standard deviation of the error term divided by the mean of the error term by company-year for each company-year. The eight alternative definitions come from looking at the combined sample of females and males and the male-only sample, and then looking at the four variables including annual salary, natural log of annual salary, estimated hourly wage and log of estimated hourly wage in different combinations as listed in detail at the bottom of Table 10.

III.3 Results

As seen in Panel A of Table 1, Japan has a highly competitive economy in which the average ROA in our sample increases but only slightly from 2.8% in 2001 to 4.1% in 2004 and 4.4% in 2006. These numbers show that Japan has a far more competitive industrial structure than the United States, where the comparable numbers are known to be in the high single digits, and slightly more competitive than South Korea, which the comparable numbers are in the range of 5% (Siegel, Pyun, and Chun 2011). In a market with such high levels of industrial competition, hiring talent from Japan's excluded social group in labor market—women—might be a positive differentiating factor for firms, as our later results show. As also reported in Panel A of Table 1, the average female executive ratio in Japan is quite small, increasing but only slightly from 6.8% in 2001 to 7.4% in 2004 only to move down to 7.2% in 2006.

Table 2 shows that having a higher female executive ratio is associated with increases in profitability in the manufacturing sector. In contrast, it has no significant effect in the services sector. Similarly, in Table 3 we find that having at least one female executive has a significantly positive effect on ROA in the manufacturing sector, whereas the effect is actually negative and marginally statistically significant in the services sector. All of these results are with the key control for use of temporary and part-time employees included.

It is an established fact that the Japanese services sector has far more female-owned businesses than the manufacturing sector and that female-owned business are more likely to struggle financially in Japan because of structural disadvantages they face in the industries they tend to enter. Many of these female-owned service sector firms are small (Ministry of Health, Labor and Welfare, 2007; Ministry of Economy, Trade and Industry, 2011) and lacking in any competitive differentiation. As shown by METI (2004), women tend to start businesses in industries where the firm-size distribution is already skewed towards small firms, and women tend to be likelier than men to exit self-employment. Past Japanese government white papers and reports have reported data indicating that female entrepreneurs are more likely than male entrepreneurs to have started their business without prior work experience (Ministry of Health, Labor and Welfare, 2007; Kodama and Odaki, 2011) and to have goals that are less solely focused on profit (Ministry of Economy, Trade and Industry, 2011). While there is a surprisingly large number of female-owned businesses in Japan, the value-added ratio of these businesses is small (Ministry of Economy, Trade and Industry, 2004). We will be doing more work in the future to test our working hypothesis that it is female ownership of marginally competitive service sector businesses that is driving the interesting, albeit only marginally statistically significant, negative result for having at least one female executive in the service sector.

We next find in Panel A of Table 4 that North American-owned affiliates in Japan have benefited particularly from having at least one female executive. We view this as at least suggestive evidence of foreign multinationals benefiting from hiring the excluded group into positions of corporate leadership and being among the actors starting to move the Japanese labor market towards a new equilibrium.

Returning to the differences between the Japanese manufacturing and services sector, we show in Table 5 that service sector companies of 150 employees and greater are far more often employing at least one female executive. We will be examining in our future work whether this is primarily a function of higher female ownership levels in the services sector.

We next examine the possible effect of upper-middle-level female managers on corporate performance in Japan. In Table 6 we find that the medium- to large-size Japanese companies that have upper-middle-level managers only very rarely have female managers. Interestingly, the mean ratio of female section chiefs goes from 0.019 in 2001 to 0.032 in 2004 and to 0.037 in 2006. So the mean ratio is increasing in a measured way from a low base. That low base is at under 2% in 2001. And that low base is much lower than the female executive ratio we saw in the 7% range in Table 1. This remaining difference between the female section chief ratio in Table 6 and the female executive ratio in Table 1 is due to the fact that there are a large number of female-owned small businesses in the service sector, with most of these female businesses never rising to the size level where they would need middle management.

We then show in Table 7 that having at least female section chief is uniformly useful to corporate performance. This is true for a sample that comprises the entire Japanese economy—both manufacturing and services. However, in looking closely at the data, we find that the result is particularly driven by the manufacturing sector.

Next, we find in Table 8 that foreign-owned firms hire female section chiefs and female division chiefs at far higher rates than the general population of Japanese firms. Furthermore, majority-owned foreign firms typically have higher female managerial representation than even minority-owned foreign firms, which in turn typically have higher female managerial representation than domestic firms. As seen in Panel A of Table 8, majority-owned foreign firms employ at least one female section chief at a rate that is more than two and a half times higher than for the sample of all firms. Majority-owned foreign firms have a female section chief ratio that is 50% higher than for the sample of all firms. Majority-owned foreign firms employ at least one female division chief at a rate that is more than five times higher than for the sample of all firms. Majority-owned foreign firms have a female division chief ratio that is more than five times higher than for the sample of all firms. We then also show in Panel B of Table 8 that majority-owned foreign firms are significantly more likely to have at least one female section chief and at least one female division chief, even after controlling for firm size, leverage, R&D intensity, advertising intensity, industry, and year dummies.

Next, we show in Panel A of Table 9 that a significant mechanism behind the profit differences is that companies simply pay their female managers significantly less, even controlling for tenure, job experience, education, part-time status, geographic location, company fixed effects, job title*year fixed effects, and industry*year fixed effects. We find that this is powerful evidence of Becker's wage-based explanation being able to explain much of the profit opportunity for companies in employing female managers in Japan.[7]

Still, differences in pay are just part of the story in Japan. We show in Panel B of Table 9 that adding at least one female executive leads to a boost in productivity in the firm level. This

[7] We also confirmed that the wage difference is not driven by differences in family benefits received between male and female managers.

is true even when controlling for the standard input-based determinant of productivity as well as a range of other controls, including firm fixed effects and year dummies. Strikingly, the Becker explanation is highly incomplete for explaining the Japanese data. Clearly, there is something about adding female leadership which leads to higher productivity in Japanese manufacturing companies.

Lastly, we conclude our empirical analysis by showing in Table 10 that our results from Tables 2-3 are robust to further controlling for nine alternative definitions of Japanese firms' deviation from standard Japanese human resource management practices. Specifically, our results are not driven by some Japanese firms' deviation from seniority-based promotion or seniority-based pay. This strongly suggests that female managerial representation is acting independently in its influence of company profitability.

IV. Conclusion

In conclusion, this paper has shown that manufacturing firms in Japan have benefited from hiring female executives and female managers, and that a significant part of the benefit in Japan may come from cost savings. The findings in this paper are consistent with the notion that some owners of Japanese firms indulged in what Becker described as a "taste for discrimination" while others exploited the sexism of their peers and hired members of the excluded group to senior management positions. Those that went against this social norm of discriminating against women in the managerial labor market appear to have attained higher profitability. Part of the higher profitability came from lower compensation costs, but part of it clearly comes from a productivity boost that follows the addition of female managerial leadership. The latter results

shows that the Becker pay-based explanation needs to be reformulated to take on a major productivity effect of female leadership in the world's third-largest economy.

Interestingly, the same is not often true for service sector firms. Past studies along with contemporary demographic data shed light on why this would be the case. We know from past studies that women are more likely to start their own firms in the service sector, that they are more likely to start firms in the least profitable and structurally attractive parts of the service sector, that they exit self-employment more often than men. We know from contemporary demographic data that female ownership is far higher in the service sector. Also, at the same time we know that women have a higher representation in management in the Japanese service sector. Thus, Japanese service sector firms may have less opportunity for competitive differentiation in hiring female managers than do Japanese manufacturing firms. Yet unfortunately there currently seems no way to match past surveys of female entrepreneurship with the data sets on firm performance used in this paper. Thus, further research should be aimed at utilizing a combination of quantitative and qualitative data collection on female ownership and linking that to firm performance.

In closing, whereas past studies found mixed results on Becker's profit hypothesis due to data and methodological limitation, we have found striking contemporary evidence from Japan that manufacturing companies systematically benefit from starting to employ female executives and female upper-middle managers. We also find strong evidence that part of this benefit comes from cost savings due to lower compensation costs given in Japan to female executives and female managers, while another large part comes from a productivity boost that follows the addition of female managerial leadership. Thus, this study is one of the first to provide strong empirical support for Becker's profit hypothesis and proposed cost savings mechanisms, in the

world's third largest economy no less. But yet it shows that Becker's proposed causal mechanism, relying solely on pay differences, is quite incomplete. What is also interesting is that the profit benefit does not appear to have been quickly erased in the 2000s, but appears to be at least a medium-term opportunity for Japanese firms before the market moves on to a new equilibrium "freer" of discrimination.

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Table 1. Summary Statistics and Correlation Matrix

Panel A. Summary Statistics for All Firms

Variable	Year	Mean	Median	Std. Dev.	Min	Max	Obs
ROA Winsorized at the .01/99.9 Percent Levels	2001	0.028	0.022	0.057	−0.437	0.369	16098
	2004	0.041	0.031	0.059	−0.437	0.369	15181
	2006	0.044	0.034	0.066	−0.437	0.369	19734
Female Executive Ratio	2001	0.068	0.000	0.141	0.000	1.000	16098
	2004	0.074	0.000	0.154	0.000	1.000	15181
	2006	0.072	0.000	0.150	0.000	1.000	19734
Female Total Employee Ratio	2001	0.313	0.262	0.194	0.000	1.000	16098
	2004	0.310	0.264	0.190	0.000	1.000	15181
	2006	0.387	0.327	0.249	0.000	1.000	19734
(Part-Time + Short-Term Workers)/Total Full-Time Permanent Employees	2001	0.313	0.037	1.063	0.000	35.176	16098
	2004	0.368	0.045	1.261	0.000	46.545	15181
	2006	0.632	0.085	3.414	0.000	255.500	19734
Log(Assets)	2001	8.240	8.078	1.302	4.111	16.467	16098
	2004	8.138	7.988	1.268	3.689	15.326	15181
	2006	8.298	8.135	1.386	3.850	16.375	19734
Foreign Ownership Percentage	2001	1.182	0.000	8.891	0.000	100.000	16098
	2004	1.430	0.000	9.766	0.000	100.000	15181
	2006	1.898	0.000	10.906	0.000	100.000	19734
Leverage	2001	0.703	0.735	0.279	0.000	9.251	16098
	2004	0.683	0.711	0.304	−1.175	11.593	15181
	2006	0.664	0.687	0.294	0.010	13.577	19734
Foreign Sales Ratio	2001	0.022	0.000	0.085	0.000	1.000	16098
	2004	0.023	0.000	0.087	0.000	1.000	15181
	2006	0.027	0.000	0.096	0.000	1.000	19734
R&D intensity	2001	0.006	0.000	0.019	0.000	0.468	16098
	2004	0.005	0.000	0.016	0.000	0.294	15181
	2006	0.006	0.000	0.039	0.000	3.527	19734
Advertising intensity	2001	0.005	0.001	0.016	0.000	0.502	16098
	2004	0.006	0.001	0.018	0.000	0.625	15181
	2006	0.006	0.001	0.019	0.000	0.504	19734

Note: The min and max for winsorized ROA is the same across the three years because the winsorization was done on the panel.

Panel B. Correlation Matrix

Variable	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
[1] ROA winsorized at the .01/99.9 percent levels	1								
[2] Female executive ratio	−0.011**	1							
[3] Female total employee ratio	0.013***	0.161***	1						
[4] (Part-Time + Short-Term Workers)/Total Full-Time Permanent Employees	0.012***	0.057***	0.144***	1					
[5] Log(Assets)	0.035***	−0.159***	−0.041***	−0.039***	1				
[6] Foreign Ownership Percentage	0.094***	−0.047***	0.004	−0.011**	0.151***	1			
[7] Leverage	−0.217***	−0.013***	0.013***	0.013***	−0.117***	−0.046***	1		
[8] Foreign Sales Ratio	0.043***	−0.054***	−0.019***	−0.037***	0.207***	0.137***	−0.080***	1	
[9] R&D intensity	−0.002	−0.046***	−0.023***	−0.028***	0.139***	0.067***	−0.107***	0.162***	1
[10] Advertising intensity	0.012***	0.060***	0.120***	0.046***	0.079***	0.066***	−0.043***	−0.018***	0.061***

Note: *** denotes significance at the .01 level, ** at the .05 level, and * at the .10 level.

Panel C. Summary Statistics for Manufacturing Firms Only							
Variable	Year	Mean	Median	Std. Dev.	Min	Max	Obs
ROA Winsorized at the .01/99.9 Percent Levels	2001	0.024	0.021	0.057	−0.437	0.369	8803
	2004	0.043	0.033	0.058	−0.437	0.369	7704
	2006	0.045	0.036	0.064	−0.437	0.369	9723
Female Executive Ratio	2001	0.067	0.000	0.139	0.000	1.000	8803
	2004	0.077	0.000	0.153	0.000	1.000	7704
	2006	0.070	0.000	0.144	0.000	1.000	9723
Female Total Employee Ratio	2001	0.291	0.247	0.186	0.000	0.962	8803
	2004	0.285	0.247	0.177	0.000	1.000	7704
	2006	0.394	0.333	0.265	0.000	1.000	9723
(Part-Time + Short-Term Workers)/Total Full-Time Permanent Employees	2001	0.186	0.035	0.599	0.000	12.750	8803
	2004	0.199	0.044	0.592	0.000	11.523	7704
	2006	0.305	0.074	1.870	0.000	111.000	9723
Log(Assets)	2001	8.210	8.014	1.285	4.111	15.097	8803
	2004	8.066	7.878	1.229	4.143	15.006	7704
	2006	8.338	8.126	1.350	3.871	15.179	9723
Foreign Ownership Percentage	2001	1.193	0.000	8.371	0.000	100.000	8803
	2004	1.398	0.000	9.009	0.000	100.000	7704
	2006	1.978	0.000	10.463	0.000	100.000	9723
Leverage	2001	0.676	0.706	0.268	0.020	3.849	8803
	2004	0.653	0.684	0.271	−0.213	5.736	7704
	2006	0.640	0.662	0.271	0.010	6.308	9723
Foreign Sales Ratio	2001	0.033	0.000	0.102	0.000	1.000	8803
	2004	0.035	0.000	0.107	0.000	0.993	7704
	2006	0.044	0.000	0.121	0.000	1.000	9723
R&D intensity	2001	0.010	0.000	0.023	0.000	0.468	8803
	2004	0.009	0.000	0.020	0.000	0.294	7704
	2006	0.010	0.000	0.050	0.000	3.527	9723
Advertising intensity	2001	0.004	0.001	0.014	0.000	0.502	8803
	2004	0.004	0.001	0.014	0.000	0.353	7704
	2006	0.004	4.64e-04	0.016	0.000	0.504	9723

Panel D. Summary Statistics for Service Firms Only							
Variable	Year	Mean	Median	Std. Dev.	Min	Max	Obs
ROA winsorized at the .01/99.9 percent levels	2001	0.032	0.022	0.058	−0.437	0.369	7295
	2004	0.038	0.029	0.061	−0.437	0.369	7477
	2006	0.042	0.032	0.069	−0.437	0.369	10011
Female executive ratio	2001	0.069	0.000	0.144	0.000	1.000	7295
	2004	0.072	0.000	0.155	0.000	1.000	7477
	2006	0.075	0.000	0.155	0.000	1.000	10011
Female total employee ratio	2001	0.338	0.279	0.199	0.000	1.000	7295
	2004	0.336	0.280	0.200	0.000	1.000	7477
	2006	0.380	0.322	0.233	0.000	1.000	10011
(Part-Time + Short-Term Workers)/Total Full-Time Permanent Employees	2001	0.467	0.042	1.420	0.000	35.176	7295
	2004	0.542	0.047	1.675	0.000	46.545	7477
	2006	0.949	0.102	4.403	0.000	255.500	10011
Log(Assets)	2001	8.276	8.161	1.322	4.407	16.467	7295
	2004	8.212	8.118	1.303	3.689	15.326	7477
	2006	8.259	8.144	1.420	3.850	16.375	10011
Foreign Ownership Percentage	2001	1.168	0.000	9.482	0.000	100.000	7295
	2004	1.463	0.000	10.490	0.000	100.000	7477
	2006	1.820	0.000	11.321	0.000	100.000	10011
Leverage	2001	0.735	0.765	0.288	0.000	9.251	7295
	2004	0.713	0.740	0.333	−1.175	11.593	7477
	2006	0.687	0.712	0.313	0.023	13.577	10011
Foreign Sales Ratio	2001	0.009	0.000	0.055	0.000	1.000	7295
	2004	0.010	0.000	0.056	0.000	1.000	7477
	2006	0.011	0.000	0.059	0.000	0.977	10011
R&D intensity	2001	0.002	0.000	0.013	0.000	0.417	7295
	2004	0.002	0.000	0.010	0.000	0.280	7477
	2006	0.002	0.000	0.023	0.000	0.996	10011
Advertising intensity	2001	0.007	0.001	0.017	0.000	0.390	7295
	2004	0.008	0.001	0.021	0.000	0.625	7477
	2006	0.008	0.001	0.021	0.000	0.472	10011

Note: The ROA winsorization was done on the three-year combined panel of observations, and that is why the min and max are the same across those three years.

Table 2. A Tale of Two Sectors: The Effect of Female Executive Ratio on ROA

	[1] DV: ROA, for Manufacturing Sector	[2] DV: ROA, for Services Sector
Independent Variable:		
Female Executive Ratio	0.011**	−0.008
	[0.004]	[0.005]
Total Female Employee Ratio	0.014***	0.003
	[0.003]	[0.004]
(Part-Time + Short-Term Workers)/Total Full-Time Permanent Employees	−1.4e-04	3.091e-04
	[2.789e-04]	[3.014e-04]
Log (Assets)	0.023***	−0.006**
	[0.004]	[0.003]
Foreign Ownership Percentage	7.31E-05	−5.6e-05
	[1.441e-04]	[1.478e-04]
Leverage	−0.088***	−0.025**
	[0.013]	[0.010]
Foreign Sales Ratio	0.025**	0.018
	[0.010]	[0.017]
R&D Intensity	−0.119	−0.149***
	[0.082]	[0.046]
Advertising Intensity	−0.128*	−0.474***
	[0.069]	[0.151]
Year Dummies Included	Yes	Yes
Company Fixed Effects Included	Yes	Yes
p value	0.000	0.000
Obs	26230	24783
R-square	0.094	0.023

Note: *** indicates significance at the .01 level, ** significance at the .05 level, and * significance at the .10 level

T3. A Tale of Two Sectors: The Effect of Having At Least One Female Executive on ROA

	[1] DV: ROA, for Manufacturing Sector	[2] DV: ROA, for Services Sector
Independent Variable:		
At Least One Female Executive	0.003**	−0.002*
	[0.001]	[0.001]
Total Female Employee Ratio	0.014***	0.003
	[0.003]	[0.004]
(Part-Time + Short-Term Workers)/Total Full-Time Permanent Employees	−1.352e-04	3.007e-04
	[2.777e-04]	[3.003e-04]
Log (Assets)	0.023***	−0.006**
	[0.004]	[0.003]
Foreign Ownership Percentage	7.2e-05	−5.4e-05
	[1.441e-04]	[1.479e-04]
Leverage	−0.088***	−0.025**
	[0.013]	[0.010]
Foreign Sales Ratio	0.025**	0.018
	[0.011]	[0.017]
R&D Intensity	−0.119	−0.148***
	[0.082]	[0.046]
Advertising Intensity	−0.129*	−0.474***
	[0.069]	[0.151]
Year Dummies Included	Yes	Yes
Company Fixed Effects Included	Yes	Yes
p value	0.000	0.000
Obs	26230	24783
R-square	0.094	0.023

Note: *** indicates significance at the .01 level, ** significance at the .05 level, and * significance at the .10 level

Table 4. North American Multinationals and Female Executives

Panel A. The Largest Gain is For North American Manufacturing Companies That Hire or Promote A Female Executive

	DV: ROA, for Manufacturing Sector
Independent Variable:	
At Least One Female Executive	0.003**
	[0.001]
At Least Two Female Executives	0.001
	[0.002]
North American ownership	0.009
	[0.042]
North American ownership * At Least One Female Executive	0.059***
	[0.002]
Total Female Employee Ratio	0.018***
	[0.003]
(Part-Time + Short-Term Workers)/Total Full-Time Permanent Employees	-1.235e-04
	[2.306e-04]
Log (Assets)	0.025***
	[0.004]
Foreign Ownership Percentage	6.53e-05
	[1.621e-04]
Leverage	-0.087***
	[0.012]
Foreign Sales Ratio	0.028***
	[0.011]
R&D Intensity	-0.111***
	[0.079]
Advertising Intensity	-0.129*
	[0.073]
Year Dummies Included	Yes
Company Fixed Effects Included	Yes
p value	0.000
Obs	23812
R-square	0.098

Note: *** indicates significance at the .01 level, ** significance at the .05 level, and * significance at the .10 level

Table 5. In Firms With More Than 150 Employees, Female Managerial Representation Is More of a Differentiation Source in Manufacturing

Size of Firms	ROA for Manufacturing	ROA for Services	Female Executive Ratio for Manufacturing	Female Executive Ratio for Services	Proportion with At Least One Female Executive in Manufacturing	Proportion with At Least One Female Executive in Services
50–99	0.033	0.031	0.098	0.080	0.314	0.264
100–149	0.038	0.037	0.081	0.071	0.280	0.250
150–199	0.041	0.037	0.060	0.069	0.234	0.249
200–299	0.040	0.039	0.047	0.070	0.187	0.246
300–999	0.042	0.046	0.029	0.060	0.135	0.236
More than 1,000	0.045	0.056	0.016	0.074	0.109	0.316

Table 6. Summary Statistics on Firms with Female Managers and Correlation Matrix

Panel A. Summary Statistics for All Firms

Variable	Year	Mean	Median	Std. Dev.	Min	Max	Obs
ROA	2001	0.027	0.023	0.048	−0.354	0.348	1427
	2004	0.043	0.035	0.048	−0.185	0.423	1686
	2006	0.044	0.035	0.051	−0.354	0.368	1686
At Least One Female Section Chief	2001	0.071	0.000	0.257	0.000	1.000	1427
	2004	0.101	0.000	0.302	0.000	1.000	1686
	2006	0.120	0.000	0.326	0.000	1.000	1686
Female Section Chief Ratio	2001	0.019	0.000	0.101	0.000	1.000	1427
	2004	0.032	0.000	0.126	0.000	1.000	1686
	2006	0.037	0.000	0.136	0.000	1.000	1686
At Least One Female Division Chief	2001	0.015	0.000	0.120	0.000	1.000	1427
	2004	0.021	0.000	0.143	0.000	1.000	1686
	2006	0.027	0.000	0.161	0.000	1.000	1686
Female Division Chief Ratio	2001	0.006	0.000	0.064	0.000	1.000	1427
	2004	0.009	0.000	0.077	0.000	1.000	1686
	2006	0.012	0.000	0.092	0.000	1.000	1686
Female Employee Ratio	2001	0.256	0.207	0.172	0.000	0.931	1427
	2004	0.272	0.233	0.171	0.000	1.000	1686
	2006	0.437	0.392	0.250	0.000	1.000	1686
(Part-Time + Short-Term Workers)/ Total Full-Time Permanent Employees	2001	0.179	0.023	0.581	0.000	10.518	1427
	2004	0.234	0.030	0.893	0.000	17.225	1686
	2006	0.441	0.061	1.575	0.000	29.252	1686
Log(Assets)	2001	9.698	9.484	1.611	4.727	16.467	1427
	2004	9.638	9.388	1.662	5.886	16.388	1686
	2006	9.716	9.421	1.784	5.342	16.375	1686
Foreign Ownership Percentage	2001	2.640	0.000	10.517	0.000	100.000	1427
	2004	3.272	0.000	10.564	0.000	100.000	1686
	2006	3.907	0.000	12.052	0.000	100.000	1686
Leverage	2001	0.647	0.664	0.234	0.020	1.793	1427
	2004	0.618	0.631	0.238	0.059	2.317	1686
	2006	0.633	0.658	0.238	0.049	1.818	1686
Foreign Sales Ratio	2001	0.051	0.000	0.129	0.000	0.960	1427
	2004	0.052	0.000	0.130	0.000	0.983	1686
	2006	0.049	0.000	0.130	0.000	0.996	1686
R&D Intensity	2001	0.015	0.002	0.029	0.000	0.369	1427
	2004	0.013	0.001	0.025	0.000	0.250	1686
	2006	0.012	0.000	0.030	0.000	0.412	1686
Advertising Intensity	2001	0.007	0.002	0.017	0.000	0.204	1427
	2004	0.008	0.001	0.023	0.000	0.437	1686
	2006	0.007	0.001	0.018	0.000	0.272	1686

Panel B. Correlation Matrix

Variable	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
[1] ROA	1											
[2] At Least One Female Section Chief	0.034**	1										
[3] Female Section Chief Ratio	0.026*	0.734***	1									
[4] At Least One Female Division Chief	0.003	0.126***	0.080***	1								
[5] Female Division Chief Ratio	−0.005	0.064***	0.060***	0.784***	1							
[6] Female Employee Ratio	0.031**	0.120***	0.128***	0.068***	0.078***	1						
[7] (Part-Time + Short-Term Workers)/Total Full-Time Permanent Employees	0.039***	0.092***	0.129***	0.036**	0.033**	0.207***	1					
[8] Log(Assets)	0.051***	0.052***	−0.059***	0.021	−0.032**	−0.081***	−0.030**	1				
[9] Foreign Ownership Percentage	0.125***	0.066***	−0.002	0.043***	0.028**	−0.014	−0.024	0.370***	1			
[10] Leverage	−0.269***	0.022	0.036**	0.022	0.037**	0.031**	0.041***	−0.199***	−0.166***	1		
[11] Foreign Sales Ratio	0.037**	−0.019	−0.042***	−0.022	−0.025*	−0.037***	−0.070***	0.304***	0.283***	−0.165***	1	
[12] R&D Intensity	0.045***	0.001	−0.051***	−0.004	−0.021	−0.085***	−0.085***	0.339***	0.261***	−0.270***	0.366***	1
[13] Advertising Intensity	0.023	0.138***	0.095***	0.109***	0.078***	0.070***	0.076***	0.141***	0.109***	−0.112***	−0.028**	0.058***

Note: *** indicates significance at the .01 level, ** significance at the .05 level, and * significance at the .10 level

Table 7. Female Section Chief Effect	
	DV: ROA
Independent Variable:	
At Least One Female Section Chief	0.008**
	[0.003]
Female Section Chief Ratio	−0.013
	[0.009]
At Least One Female Division Chief	0.006
	[0.009]
Female Division Chief Ratio	−0.017
	[0.019]
Total Female Employee Ratio	0.002
	[0.007]
(Part-Time + Short-Term Workers)/Total Full-Time Permanent Employees	0.001
	[0.001]
Log (Assets)	0.008
	[0.010]
Foreign Ownership Percentage	4.938e-04**
	[1.972e-04]
Leverage	−0.084***
	[0.021]
Foreign Sales Ratio	−0.005
	[0.020]
R&D Intensity	−0.398***
	[0.100]
Advertising Intensity	−0.207
	[0.161]
Year Dummies Included	Yes
Company Fixed Effects Included	Yes
p value	0.000
Obs	4799
R-square	0.123
Note: *** indicates significance at the .01 level, ** significance at the .05 level, and * significance at the .10 level	

Table 8. Foreign Ownership and Female Representation in Management

Panel A. Summary Statistics

	Have At Least One Female Section Chief	Female Section Chief Ratio	At Least One Female Division Chief	Female Division Chief Ratio
All Firms	0.099	0.030	0.021	0.009
More Than 10% Foreign Ownership	0.153	0.026	0.029	0.009
More Than 20% Foreign Ownership	0.167	0.027	0.040	0.014
More Than 25% Foreign Ownership	0.173	0.026	0.041	0.014
More Than 30% Foreign Ownership	0.158	0.026	0.058	0.020
More Than 33% Foreign Ownership	0.167	0.030	0.061	0.025
More Than 40% Foreign Ownership	0.221	0.039	0.078	0.034
More Than 50% Foreign Ownership	0.255	0.046	0.106	0.051
More Than 60% Foreign Ownership	0.250	0.049	0.100	0.058
More Than 70% Foreign Ownership	0.278	0.054	0.111	0.065
More Than 80% Foreign Ownership	0.273	0.055	0.091	0.040
More Than 90% Foreign Ownership	0.250	0.046	0.071	0.039
100% Foreign Ownership	0.240	0.049	0.040	0.040

Panel B. Multivariate Regression Predicting Female Representation in Management		
	Model 1	Model 2
	DV: At Least One Female Section Chief	DV: At Least One Female Division Chief
	Dprobit regression	Dprobit regression
	Marginal probabilities are shown with the standard errors below them	Marginal probabilities are shown with the standard errors below them
Independent Variables:		
Majority Foreign Ownership	0.111***	0.090***
	[0.051]	[0.055]
Log(assets)	0.008***	0.002
	[0.003]	[0.002]
Leverage	0.037**	0.022**
	[0.018]	[0.010]
R&D Intensity	0.234	0.104
	[0.160]	[0.074]
Advertising Intensity	0.646***	0.230***
	[0.179]	[0.078]
Industry Dummies Included	Yes	Yes
Year Dummies Included	Yes	Yes
p-value	0.000	0.000
R-square	0.114	0.115
Obs	4717	3313

Note: The sample size falls to 4717 in Model 1 because of the few industries that predict the dependent variable perfectly (typically because not a single firm in that industry has a single female section chief). The sample size drops further to 3313 in Model 2, because an additional number of industries predict the dependent variable perfectly (typically because not a single firm in that industry has a single female division chief).

Table 9. Wage and Productivity Mechanisms for Female Managers	
Panel A. Wage Mechanism	
	Managers Only
	DV: Wage per Hour
Independent Variable:	
Is Female	-0.025***
	[0.004]
Tenure	0.006***
	[5.239e-04]
Tenure^2	-8.69e-05***
	[1.17e-05]
Years since college or less-than-college graduation	0.005***
	[0.001]
Years since college or less-than-college graduation^2	-8.34e-06
	[1.41e-05]
Part-time Job Dummy	0.186***
	[0.051]
Junior High School Education (Education = 9 years)	-0.023***
	[0.004]
Two-Year College/Special Training School Education (Education = 14 years)	0.019***
	[0.003]
Four-Year College Education (Education = 16 years)	0.044***
	[0.002]
Prefecture is Tokyo	0.005
	[0.008]
Prefecture is Kanagawa	-0.002
	[0.010]
Prefecture is Osaka	0.008
	[0.014]
Company Fixed Effects Included	Yes
Job Title*Year Fixed Effects Included	Yes
Industry*Year Fixed Effects Included	Yes
p value	0.000
Obs	116263
R-square	0.221
Note: The reference group for education is High School Graduates	
(Education = 12 years)	
Note: For both panels, *** indicates significance at the .01 level, ** significance	
at the .05 level, and * significance at the .10 level	

Panel B. Productivity Mechanism	
	Manufacturing Sector
	DV: log(Gross Profit)
Independent Variable:	
At Least One Female Executive	0.023**
	[0.010]
log(Total Employees)	0.247***
	[0.032]
log(Fixed Assets)	0.007
	[0.019]
log(Imputed Purchased Inputs)	0.581***
	[0.027]
Total Female Employee Ratio	0.113***
	[0.024]
(Part-Time + Short-Term Workers)/Total Full-Time Permanent Employees	7.53e-05
	[0.002]
Foreign Ownership Percentage	0.001
	[0.001]
Leverage	-0.526***
	[0.058]
Foreign Sales Ratio	0.209**
	[0.102]
R&D Intensity	-0.308***
	[0.245]
Advertising Intensity	2.329*
	[1.244]
Year Dummies Included	Yes
Company Fixed Effects Included	Yes
p value	0.000
Obs	25895
R-square	0.253

Table 10. Main Results Are Robust to Proxies for General Deviation from Post-World War II Japanese Human Resource Management Practices

Panel A. Robustness to Proxy for Ratio of Mid-Career Hires

Panel B. Robustness to Proxies for Seniority-Based Compensation along with Proxy for Ratio of Mid-Career Hires

	DV: ROA winsorized at the .01/99.9 level		DV: ROA winsorized at the .01/99.9 level		DV: ROA winsorized at the .01/99.9 level		DV: ROA winsorized at the .01/99.9 level		DV: ROA winsorized at the .01/99.9 level		DV: ROA winsorized at the .01/99.9 level		DV: ROA winsorized at the .01/99.9 level		DV: ROA winsorized at the .01/99.9 level
Independent Variable:		Independent Variable:		Independent Variable:		Independent Variable:		Independent Variable:		Independent Variable:		Independent Variable:		Independent Variable:	
At Least One Female Section Chief	0.008**	At Least One Female Section Chief	0.008**	At Least One Female Section Chief	0.008**	At Least One Female Section Chief	0.008**	At Least One Female Section Chief	0.008**	At Least One Female Section Chief	0.008**	At Least One Female Section Chief	0.008**	At Least One Female Section Chief	0.008**
	[0.003]		[0.004]		[0.004]		[0.004]		[0.004]		[0.004]		[0.004]		[0.004]
Female Section Chief Ratio	−0.013	Female Section Chief Ratio	−0.013	Female Section Chief Ratio	−0.016*	Female Section Chief Ratio	−0.013	Female Section Chief Ratio	−0.016*	Female Section Chief Ratio	−0.013	Female Section Chief Ratio	−0.016*	Female Section Chief Ratio	−0.016*
	[0.009]		[0.009]		[0.009]		[0.009]		[0.009]		[0.009]		[0.009]		[0.009]
At Least One Female Division Chief	0.006	At Least One Female Division Chief	0.007	At Least One Female Division Chief	0.007	At Least One Female Division Chief	0.007	At Least One Female Division Chief	0.007	At Least One Female Division Chief	0.007	At Least One Female Division Chief	0.007	At Least One Female Division Chief	0.007
	[0.009]		[0.010]		[0.010]		[0.010]		[0.010]		[0.010]		[0.010]		[0.010]
Female Division Chief Ratio	−0.017	Female Division Chief Ratio	−0.017	Female Division Chief Ratio	−0.017	Female Division Chief Ratio	−0.017	Female Division Chief Ratio	−0.017	Female Division Chief Ratio	−0.017	Female Division Chief Ratio	−0.017	Female Division Chief Ratio	−0.017
	[0.019]		[0.019]		[0.019]		[0.019]		[0.019]		[0.019]		[0.019]		[0.019]
Total Female Employee Ratio	0.002	Total Female Employee Ratio	0.002	Total Female Employee Ratio	0.002	Total Female Employee Ratio	0.002	Total Female Employee Ratio	0.002	Total Female Employee Ratio	0.002	Total Female Employee Ratio	0.003	Total Female Employee Ratio	0.002
	[0.007]		[0.007]		[0.007]		[0.007]		[0.007]		[0.007]		[0.007]		[0.007]
(Part-Time + Short-Term Workers)/Total Full-Time Permanent Employees	0.001	(Part-Time + Short-Term Workers)/Total Full-Time Permanent Employees	0.001	(Part-Time + Short-Term Workers)/Total Full-Time Permanent Employees	0.001	(Part-Time + Short-Term Workers)/Total Full-Time Permanent Employees	0.001	(Part-Time + Short-Term Workers)/Total Full-Time Permanent Employees	0.001	(Part-Time + Short-Term Workers)/Total Full-Time Permanent Employees	0.001	(Part-Time + Short-Term Workers)/Total Full-Time Permanent Employees	0.001	(Part-Time + Short-Term Workers)/Total Full-Time Permanent Employees	0.001
	[0.002]		[0.002]		[0.002]		[0.002]		[0.002]		[0.002]		[0.002]		[0.002]
Log (Assets)	0.008	Log (Assets)	0.005	Log (Assets)	0.005	Log (Assets)	0.005	Log (Assets)	0.005	Log (Assets)	0.005	Log (Assets)	0.005	Log (Assets)	0.005
	[0.010]		[0.010]		[0.010]		[0.010]		[0.010]		[0.010]		[0.010]		[0.010]
Foreign Ownership Percentage	4.92e-04	Foreign Ownership Percentage	0.001***	Foreign Ownership Percentage	0.001***	Foreign Ownership Percentage	0.001***	Foreign Ownership Percentage	0.001***	Foreign Ownership Percentage	0.001***	Foreign Ownership Percentage	0.001***	Foreign Ownership Percentage	0.001***
	[1.971e-04]		[2.103e-04]		[2.094e-04]		[2.093e-04]		[2.099e-04]		[2.109e-04]		[2.098e-04]		[2.096e-04]
Leverage	−0.084***	Leverage	−0.080***	Leverage	−0.079***	Leverage	−0.079***	Leverage	−0.080***	Leverage	−0.079***	Leverage	−0.079***	Leverage	−0.079***
	[0.021]		[0.021]		[0.021]		[0.021]		[0.021]		[0.021]		[0.021]		[0.021]
Foreign Sales Ratio	−0.006	Foreign Sales Ratio	−0.005	Foreign Sales Ratio	−0.005	Foreign Sales Ratio	−0.005	Foreign Sales Ratio	−0.005	Foreign Sales Ratio	−0.005	Foreign Sales Ratio	−0.005	Foreign Sales Ratio	−0.005
	[0.020]		[0.020]		[0.020]		[0.020]		[0.020]		[0.020]		[0.020]		[0.020]
R&D Intensity	−0.398***	R&D Intensity	−0.399***	R&D Intensity	−0.405***	R&D Intensity	−0.404***	R&D Intensity	−0.404***	R&D Intensity	−0.403***	R&D Intensity	−0.403***	R&D Intensity	−0.404***
	[0.100]		[0.102]		[0.101]		[0.102]		[0.102]		[0.102]		[0.102]		[0.102]
Advertising Intensity	−0.211	Advertising Intensity	−0.310*	Advertising Intensity	−0.314*	Advertising Intensity	−0.301*	Advertising Intensity	−0.319*	Advertising Intensity	−0.310*	Advertising Intensity	−0.319*	Advertising Intensity	−0.317*
	[0.161]		[0.166]		[0.168]		[0.166]		[0.168]		[0.165]		[0.169]		[0.168]
Ratio of Mid-Career Hires	−0.006	First Alternative Definition of Deviation from Seniority-Based Pay	3.053e-04	Second Alternative Definition of Deviation from Seniority-Based Pay	0.001*	Third Alternative Definition of Deviation from Seniority-Based Pay	2.6e-05	Fourth Alternative Definition of Deviation from Seniority-Based Pay	−3.111e-04	Fifth Alternative Definition of Deviation from Seniority-Based Pay	1.41e-05	Sixth Alternative Definition of Deviation from Seniority-Based Pay	7.02e-05	Seventh Alternative Definition of Deviation from Seniority-Based Pay	−7.76e-05	Eighth Alternative Definition of Deviation from Seniority-Based Pay	4.12e-05
	[0.009]		[1.16e-04]		[0.001]		[2.83e-05]		[2.018e-04]		[4.27e-05]		[1.132e-04]		[1.237e-04]		[3.11e-05]
		Ratio of Mid-Career Hires	−0.008	Ratio of Mid-Career Hires	−0.008	Ratio of Mid-Career Hires	−0.008	Ratio of Mid-Career Hires	−0.008	Ratio of Mid-Career Hires	−0.008	Ratio of Mid-Career Hires	−0.008	Ratio of Mid-Career Hires	−0.009	Ratio of Mid-Career Hires	−0.008
			[0.009]		[0.009]		[0.009]		[0.009]		[0.009]		[0.009]		[0.009]		[0.009]
Year Dummies Included	Yes	Year Dummies Included	Yes	Year Dummies Included	Yes	Year Dummies Included	Yes	Year Dummies Included	Yes	Year Dummies Included	Yes	Year Dummies Included	Yes	Year Dummies Included	Yes	Year Dummies Included	Yes
Company Fixed Effects Included	Yes	Company Fixed Effects Included	Yes	Company Fixed Effects Included	Yes	Company Fixed Effects Included	Yes	Company Fixed Effects Included	Yes	Company Fixed Effects Included	Yes	Company Fixed Effects Included	Yes	Company Fixed Effects Included	Yes	Company Fixed Effects Included	Yes
p value	0.000	p value	0.000	p value	0.000	p value	0.000	p value	0.000	p value	0.000	p value	0.000	p value	0.000	p value	0.000
Obs	4799	Obs	4667	Obs	4646	Obs	4667	Obs	4646	Obs	4667	Obs	4646	Obs	4667	Obs	4646
R-square	0.123	R-square	0.129	R-square	0.130	R-square	0.129	R-square	0.130	R-square	0.129	R-square	0.129	R-square	0.129	R-square	0.129

Note: For both panels, *** indicates significance at the .01 level, ** significance at the .05 level, and * significance at the .10 level

The following are the definitions of the alternative Deviation from Seniority-Based Pay variables: (First Alternative Definition) Annual Salary regressed on Female, years since school, years since school squared, Female*years since school, Female*years since school squared, tenure, Female*tenure, tenure squared, Female*tenure squared, education, Female*education, company fixed effect, job title fixed effect and industry*year fixed effect. Then we take the results from that individual-level regression analysis and calculate the standard deviation of the error term divided by the mean of the error term by company-year for each company-year. (Second Alternative Definition) For males only: Annual Salary regressed on years since school, years since school squared, tenure, tenure squared, education, company fixed effect, job title fixed effect and industry*year fixed effect. Then we take the results from that individual-level regression analysis and calculate the standard deviation of the error term divided by the mean of the error term by company-year for each company-year. (Third Alternative Definition) Log(Annual Salary) regressed on Female, years since school, years since school squared, Female*years since school, Female*years since school squared, tenure, Female*tenure, tenure squared, Female*tenure squared, education, Female*education, company fixed effect, job title fixed effect and industry*year fixed effect. Then we take the results from that individual-level regression analysis and calculate the standard deviation of the error term divided by the mean of the error term by company-year for each company-year. (Fourth Alternative Definition) For males only: Log(Annual Salary) regressed on years since school, years since school squared, tenure, tenure squared, education, company fixed effect, job title fixed effect and industry*year fixed effect. Then we take the results from that individual-level regression analysis and calculate the standard deviation of the error term divided by the mean of the error term by company-year for each company-year. (Fifth Alternative Definition) Hourly wage regressed on Female, years since school, years since school squared, Female*years since school, Female*years since school squared, tenure, Female*tenure, tenure squared, Female*tenure squared, education, Female*education, company fixed effect, job title fixed effect and industry*year fixed effect. Then we take the results from that individual-level regression analysis and calculate the standard deviation of the error term divided by the mean of the error term by company-year for each company-year. (Sixth Alternative Definition) For males only: Hourly wage regressed on years since school, years since school squared, tenure, tenure squared, education, company fixed effect, job title fixed effect and industry*year fixed effect. Then we take the results from that individual-level regression analysis and calculate the standard deviation of the error term divided by the mean of the error term by company-year for each company-year. (Seventh Alternative Definition) Log(Hourly wage) regressed on Female, years since school, years since school squared, Female*years since school, Female*years since school squared, tenure, Female*tenure, tenure squared, Female*tenure squared, education, Female*education, company fixed effect, job title fixed effect and industry*year fixed effect. Then we take the results from that individual-level regression analysis and calculate the standard deviation of the error term divided by the mean of the error term by company-year for each company-year. (Eighth Alternative Definition) For males only: Log(Hourly wage) regressed on years since school, years since school squared, tenure, tenure squared, education, company fixed effect, job title fixed effect and industry*year fixed effect. Then we take the results from that individual-level regression analysis and calculate the standard deviation of the error term divided by the mean of the error term by company-year for each company-year.