11 *Abe's Womenomics Policy*

Did It Reduce the Gender Gap in Management?

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11.1 Introduction

The underutilization of female human resources is an urgent problem in East Asian countries that face declining births, aging populations, and expected future declines in their labor forces. Many East Asian countries, such as Japan and Korea, also have a large gender wage gap. Prime Minister Abe announced that promoting female labor force participation would be one of his core growth policies when he came into office in late 2012. However, promoting higher labor force participation is not enough if family responsibilities keep women in the low earnings sector. Enabling females to build their careers is also an important goal. Nagase (2018a) found a significant effect of "Womenomics" on women's long-term employment position after their first childbirth. Long-term employment, or *seishain*[1] in Japan, connects to one's future higher wage growth; as such, the increase in work continuation of mothers in long-term employment is a welcome change. This chapter will review developments concerning

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Japanese female labor, placing Abe's Womanomics policy as part of larger policy developments. It will then closely examine the gender promotion gap, by employing two governmental micro data sources, the *Labor Force Survey* and the *Basic Survey on Wage Structure*, to see whether Abe's policy had any significant effect in increasing women in management.

For the readers who are not familiar with Japanese labor market, this chapter will first provide an overview of traditional Japanese employment practice and its effect on the gender gap in the workplace. Secondly, it will review various measures taken from 1980s up to today by the government to close the gap and their effects. Thirdly, the paper will examine developments in the earnings distribution by gender from the late 1990s to the 2010s: though the gap is closing, data still show a large gap. Finally, this chapter will discuss in more detail Abe's new policy to increase the number of women in management in Japan. In particular I focus on a major law, *Josei Katsuyaku Suisin Hō* (or The Act on Promotion of Women's Participation and Advancement in the Workplace), proposed in 2014 and passed in the summer of 2015, that mandates enterprises with more than 300 employees to take action to actively use female employees in management, although the mandate is rather weak. The chapter will then investigate whether the period of the Abe administration has had a significant impact on the number of women being promoted to management levels.

11.2 Background: Traditional Japanese Employment Practice and the Equal Employment Opportunity Law

The gender gap is large in Japan. The World Economic Forum announced in 2017 November that Japan ranked 114th among 144 countries in the gender gap index. With respect to economics, a large gender wage gap and a low percentage of females in professional, engineering, and management professions contributed to the low ranking.

In this section, I will review the development of female labor in Japan. In 1985, the Equal Employment Opportunity Law (EEOL) passed. However, despite the law, wage regressions have shown that the coefficient gap between the genders increased between 1984 to 1994 at large firms, even though the endowment difference narrowed (Hori 1998; Abe 2010, 2011).

Before the passage of the EEOL, large firms selectively employed university graduate males to be on a male-only fast promotion track, trained them as future managers, and promoted them to chief. Often then they became section heads and then department managers through tournament competition. In contrast, females were only hired in the slow track and given clerical assistant jobs, with the expectation that women would retire at marriage or childbirth. After the passage of the EEOL in 1985, firms could no longer explicitly discriminate in hiring by sex, but in fact they maintained similar hiring and training practices. They formally renamed the employment track that was previously only for university graduate males as the "fast track course" while also allowing females to apply, and they renamed the female hiring track as the "slow track course." Only a small number of females were employed along with males in the newly created "fast track course" after the passage of the EEOL, and the slow track course remained dominated by females. Studies found that many of those women in the fast track course quit work after several years – for example, Ohuchi (1999).

Still about half of firms with more than 5,000 employees today have a course-based hiring practice. This ratio has remained stable according to Ministry of Health, Labor, and Welfare's Basic Survey of Gender Equality in Employment Management. The percentage of firms that have such a practice is increasing among firms with 300 to 1000 employees, although such practice is most often found in larger companies.

In June 2008, the Ministry of Health, Labor, and Welfare established a committee on "The Gender Wage Gap under Changing Wage and Labor Practice." After the Asian financial crisis of 1998, Japanese employment practice changed substantially. Hiring of long-term employees lessened and hiring of fixed-term employees increased. Females in the slow track course were often replaced by fixed-term employees and dispatched workers, especially in larger firms. The Japan Institute of Labor Policy and Training (JILPT) in cooperation with the committee conducted a wage regression of full-time workers using the *Basic Survey on Wage Structure* of 2000 and 2006. It found that the gender wage gap is larger when firms have "course based hiring" (JILPT 2009; Fujii 2009) and that the wage gap is closing mainly due to the shrinking gender age gap among long-term employees. This in turn happened because more women stayed single and

worked as long-term employees longer, even though many still quit when they had children. The analysis also showed that females are much less likely to become managers, and this contributed to the gender wage gap (Fujii 2009).

In recent years, the distribution of the gender wage gap has gained renewed attention internationally. Whether the gap is glass ceiling or sticky floor has been newly investigated by using quantile regression on Swedish and American data (Albrecht et al. 2003). Hara (2018) conducted a similar distributional gender wage gap analysis in Japan using selected data on full-time employees from 1980 to 2015 using the *Basic Survey on Wage Structure*. Using the Firpo-Fortin-Lemieux decomposition (Firpo et al. 2009), Hara found that the raw gender wage gap generally decreased from 1980 to 2015 at most points in the wage distribution, especially in recent years, except at the top where the gap grew substantially after 2010. She also showed that the gap was larger in the lowest part of the wage distribution among large firms presumably due to course-based hiring practices, while the gap was larger in the highest part of the distribution at smaller firms in 2015.

11.3 Recent Measures to Close the Gender Wage Gap in Japan

The government has sought to close this large gender gap by three methods. One is to change the incentives and constraints faced by women when deciding whether to stay in long-term labor contracts after marriage and childbirth. In Japan, the wage prospects of long-term employees compared to hourly part-time, fixed-term contract and other non-*seishain* employees are very different, as will be shown in Section 11.6. The prospect of higher wages in the latter sector is poor. Long-term employees are given more training and have a higher probability of promotion. Therefore, promoting work continuation in *seishain* positions at marriage and at childbearing is a meaningful measure for closing the gender wage gap. Measures of this sort included increasing the income replacement rate of the childcare leave allowance, allowing *seishain* mothers to return to their jobs on a part-time basis after childbirth upon their request, reducing work hours overall, introducing five days a year of sick leave for the care of pre-school children, and reforming the childcare system. Some of these measures were taken before the accession of the Abe administration in late 2012 and some during his administration.

The second government strategy is to change the incentives of firms to promote women to management, through a series of nudges to change corporate culture. Several measures of this kind have been adopted during the Abe administration. The government has aimed to nudge firms to hire and promote more females through statutory requirements to disclose their gender gap data, such as the gender ratio in management and the gender gap in hiring. This may negatively impact the recruitment of new female hires at companies with poor records. In addition, the government has argued that firms in general do better with diversified management boards.

Third, the government also sought to increase the wage of nonstandard workers, who are poorly paid and highly disproportionately female. There are two policies of this sort. The first aims to reduce the incentive of a spouse to keep their income low, by attempting to change spousal tax deduction rules and to change firms' dependent spouse allowance linked to tax deduction rules, as will be described later. The second introduces the new equal-work/equal-wage principle irrespective of job contract status.

Early measures taken to encourage women to continue work after childbirth included the introduction of childcare leave in 1992, the introduction of a childcare leave allowance in 1995, and an increase in the leave allowance from 25 percent to 40 percent of base pay in 2001. However, the introduction of childcare leave increased women's work continuation after marriage but had no effect after childbirth (Nagase 1999). Nor did raising the childcare leave allowance of 2001 produce any change in behavior (Asai 2015). According to my interviews, many women felt that it was difficult to take the leave unless their bosses, colleagues, and husbands were supportive. However, corporate culture was not supportive enough, and husbands came home late.[2]

This effort to retain women in the long-term labor market did not succeed for some time. Other problems remained in corporate culture. Under Japanese employment practice, large firms internally train new hires in different sections of a firm by relocation, evaluation, and gradual promotion to chief, then to section head. Since firms invest in workers' firm-specific training, hoarding occurs during economic downturns, and overtime occurs during economic booms, compared to more frequent layoffs and hiring among US firms (Houseman & Abraham 1993; Abraham & Houseman 1989). Because of the higher firm-specific training, returns to tenure are higher compared to those in the USA

(Hashimoto & Raisian 1985, 1992). However, overtime work and sudden orders by the company to relocate are hard to reconcile with family needs. Consequently, many female workers resigned at marriage in the 1980s and then at pregnancy in the 1990s and 2000s. Some wished to take care of their own children, but others felt corporate culture made it difficult to take childcare leave (Teramura 2014; Enmi & Brinton 2015). Once women quit their "good jobs" – that is, the *seishain* jobs that they had begun upon graduation – they often reentered the labor force as part-time nonstandard employees at a wage near the minimum wage. However, the *National Fertility Survey* of 2002, 2005, and 2010 revealed that there was almost no increase in the average employment rate of mothers across five-year birth cohorts of their infants, observed when the first child was one year old. It was 26.8 percent in 2005 to 2009, not much higher than the 24.4 percent in 1990 to 1994.

Eventually, employment of *seishain* mothers did start to go up around 2009 and then accelerated after 2013. The short hour option mandate of 2009 – which allowed workers with a child under three to work six hours a day, applied to firms with more than 100 employees from 2010 and to all firms from 2012 – was key to the rising employment of *seishain* mothers. By using time differences in enactment of the law as a natural experiment, Nagase (2014, 2017) found that the law had a significant and powerful effect on both childbirth and labor supply. The *National Fertility Survey of 2015* also showed that new mothers' employment rate when their first child was age one was 29.1 percent for those who had a child in 2005–2009 but rose to 38.3 percent among women with first births in 2010 to 2014. However, Takeishi (2010) and Matsubara (2012) argue that the short hour option may negatively affect female careers. In part because of this, increasing women's promotion is another important feature of Womenomics.

Formal infant care provision was also helpful for maternal work continuation in general (Nagase 2003a; Unayama 2011; Nagase 2018a) – or at least helpful for work continuation among mothers in nuclear families (Asai et al. 2015) – but the provision was low in metropolitan areas and higher in rural areas. The Noda administration in 2012 prepared and enforced a significant reform concerning both day care and kindergarten, better coordinating their regulation. Before this reform, the development of childcare slots in urban areas was slow until 2008,[3] despite the series of "Angel Plans" in 1990s (Nagase 2007) and remained slow till 2012 (Nagase 2018a).

In the Japanese type of internal training system, employees are often trained to become managers. However, according to interviews, even if women were employed in the fast track course right after the EEOL reform, they were more likely to be placed in clerical jobs than males (Ohuchi 1999). Such different allocation of jobs was reduced after some years, but bosses still often gave women routine tasks, especially after childbirth, while males were given more challenging assignments (Yamaya & Nagase 2012; Nagase & Yamaya 2011). In order to be promoted to manager, internal valuation accumulation points should exceed those of coworkers. Many firms had grading systems that gave low evaluations to childcare leave takers and short hour workers. Some of our interviewees reported that at their firm, when a woman had a child, her promotion would come much later than that of comparable males who have no need to take childcare leave. A survey of *seishain* mothers by 21seiki Shokugyo Zaidan (2014) found that, on average, the respondents felt that their bosses' provision of training and feedback declined after they took child-care leave.

11.4 Abe's Policy Concerning Female Promotion and Closing the Wage Gap

Starting in 2013, the Abe administration continued to expand policies to encourage women to continue work as *seishain*. With strong leadership, it rapidly increased the number of childcare facilities, and the growth of childcare slots accelerated after a reform of childcare in 2012. The administration again increased the childcare leave allowance in the first six months after birth from 50 percent to 67 percent of base pay.

In Section 11.4.1, I will discuss laws that preceded Abe administration and then the new legislation that passed during the Abe administration to encourage firms to promote women to management. This is primarily the *Josei Katsuyaku Suishin Hō* of 2015. I will then discuss another important policy concerning women's wage – that is, policy to close the wage gap between standard and nonstandard workers – in Section 11.4.2.

11.4.1 *Laws That Nudge Firms to Promote Women to Management*

Starting around 2003, the government began to focus attention on the practices of firms that may discourage women's work continuation.

The Law to Support the Next Generation of 2003 mandated that firms with more than 300 employees assess their firm practices for compatibility with family caregiving responsibilities, starting in 2004 as measurement for low birth rate. In addition, the goal of increasing the share of women leaders to at least 30 percent by 2020 was adopted in 2003 as the Gender Equality Head Office Decision. It was reaffirmed in December 2010 as the Cabinet Decision, when the third Basic Plan for Gender Equality was adopted.[4] The "2020–30" target – achieve a 30 percent target for females in authoritative positions by 2020 – is an old policy that has been hard to achieve. The interim report showed that actual progress was far from the target.[5] In the fourth Gender Equal Participation Basic Plan of 2015, the target was modified to, for example, 25 percent women for the lowest managerial category, *kakarichō* or section chief, at private enterprises, an increase from their actual representation of 16.2 percent in 2014. Similarly, the Plan established a target of 15 percent women for *kachō*, or section heads, by 2020, up from 9.2 percent in 2014. Finally, it set a target around 10 percent for *buchō*, or department manager, the highest rank targeted, which had female representation of 6.0 percent in 2014. This Basic Plan also set a target of about 5 percent, to be rapidly increasing to 10 percent, for women on boards of directors, while the actual percentage was 2.8 percent in 2014. These numbers are calculated from the *Basic Survey on Wage Structure*, as the percentage of employees in managerial positions among those who have employment contracts without termination, working at firms with more than 100 employees. It seems that even the lower target is still hard to achieve. The White Paper on Gender Equality (2019) shows that, in 2018, women were 18.3 percent of *kakarichō*, 11.2 percent of *kachō*, and 6.6 percent of *buchō*. This is progress, but it is still short of the revised target.

When Prime Minister Abe came to office in 2013, he announced that he hoped firms listed on the stock exchange would each appoint at least one woman on their boards.[6] In 2014 June, the Cabinet Decision was made to mandate all listed firms to disclose the number of female members on their boards, effective in the new fiscal year starting in April 2015. In August 2015, the Abe cabinet also passed the Act Concerning the Promotion of Women's Career Activities, *Josei Katsuyaku Suisin Hō*, to be implemented in April 2016.

Josei Katsuyaku Suisin Hō nudges enterprises to take actions to promote women. The companies must gather data on the ratio of

women among new hires, the gender gap in average years of tenure, the overtime work hours of average workers, and the ratio of women among managers. Other types of data, such as the number of women and men taking childcare leave, must be analyzed, although firms are not mandated to disclose more than one of them.[7] Large firms are also required to make action plans. Specifically, the law requires firms with more than 300 employees to analyze the status of women within their firms and then to make action plans to increase their active participation.[8] The action plans should have specific timelines, measures, and the actual targets to be reached. The plan should be announced to workers and made public. It must also be registered at the local MHLW ministry office.

Those firms with good performance are given the *Eruboshi* recognition, which consists of three grades. These firms can put the *Eruboshi* logo on their products.[9] In March 2016, the government announced that the recognized firms would also be given preferred points in public procurement.[10] In May 2016, the government announced that 46 firms got *Eruboshi* recognition. The number increased to 291 by March 2017, 579 by March 2018, 837 by March 2019, and 1028 by March 2020.

11.4.2 Other Laws That Aim to Change Japanese Labor Practice and Close the Gender Gap

The more recent Womenomics policies of the Abe cabinet concern three things. The first policy is putting a cap on the long overtime hours among *seishain* workers. The second is closing the wage gap between standard and nonstandard workers, such as so-called part-time workers (*arubaito*), "dispatched workers," "fixed term contract workers" and "*shokutaku*." These workers are disproportionately female. The third is reform of the tax code. Regarding the first of these, the overtime reform was made into law. From the beginning of 2016, the buzzword of the Abe cabinet was "*Hatarakikata Kaikaku*" – "Change the Way We Work." When Abe reorganized the cabinet in 2016 August, he said, "The greatest challenge we meet is the *Hatarakikata Kaikaku*." The *Hatarakikata Kaikaku Hō* was proposed in 2016 and passed the Diet in 2018. Among its contents, it more strictly regulates overtime work for large firms starting in April 2019 and one year later for smaller firms.

The *Hatarakikata Kaikaku Hō* also included guidelines for the principle of "equal work, equal pay," regardless of whether one has a standard or nonstandard contract. The guidelines, announced in late 2018, say that, in principle, if workers engage in the same work and have equal capability, experience, and performance, the pay should be equal, irrespective of contract types. It is not easy to define what equal work is. Therefore, companies are to explain to workers the rational reasons for differences in pay and benefits, as well as for differences in training between standard and nonstandard employees and to remedy any irrational differences. The prefectural labor offices are to negotiate disputes between employer and employees. This principle is to be implemented starting in April 2020 for larger firms and one year later for smaller firms. The effect of this policy is yet to be seen.

Finally, Japanese tax policy has for a long time worked to support nonstandard work arrangements that often were for married females, who hoped to supplement the household budget. Scholars argued that they were accepting low wage and short work hours because their work motive was only to bring in some addition to the household budget However, in the late 1990s to early 2000s, nonstandard work arrangements increased among young workers who needed to support their own living. This happened because of a decline in demand by employers for long-term employment. Moreover, the number of single mothers increased, who also needed to support their living but many of them also worked in nonstandard employment. Among these nonstandard workers, part-time and *arubaito* are hourly paid workers, whose work hours can be either short or full-time and are paid near minimum wage.

Higuchi (1995), Nagase (2002, 2003b, 2018a, 2018b), Abe (2002), Akabayashi (2006), and Abe and Ohishi (2009) point out that the protection for dependent housewives through the spousal tax deduction and social security tax exemption is a core mechanism that limits the income of married females. Married women increase their labor supply when children grow older, but, when their annual income reaches 1.03 million yen,[11] the threshold for the tax deduction for dependent spouses, or reaches 1.30 million yen, the threshold for the social security tax exemption for dependent spouses, many of them adjust their work hours to hold their income below these thresholds, because otherwise the greater tax burden is large compared to the increased income achieved by working longer hours.

Takahashi (2010) and Bessho et al. (2014) say that the effect of the tax structure on labor supply is not large. However, the resulting

incentives for good workers to limit their hours reduces pressure for higher wages in the part-time labor market. Through wage arbitration between married part-time workers and unmarried workers, the conduct of the former, who benefit from such tax provisions, not only negatively affects their own wage level but also that of unmarried part-time and *arubaito* workers who do not benefit from keeping income below the thresholds (Nagase 2018b).

The Abe cabinet repeatedly announced, in 2014 and 2016, that it would change the rule concerning the spousal income tax deduction threshold of married females. Abe also urged large companies to change their own spousal allowance rules so that they would not affect married females' work hour choice.[12] However, the Abe cabinet in the end did not abolish the spousal tax deduction threshold. Instead, it surprisingly increased the spousal tax deduction threshold to 1.5 million yen. Theoretically this raises the total working hours at which unmarried workers have to compete with married women who benefit more from the national tax spousal deduction and social security tax exemption. It will increase the work hours of married females who are willing to work with low earnings, unless those earnings exceed the sum of their social security tax exemption and their husbands' spousal allowance.[13] The effect of this last policy is yet to be determined, as it was announced only in late 2016 and implemented in 2018.

In subsequent sections, I will use Japanese micro data to illustrate changes and the present situation of gender wage gap in Japan; I will also show how female promotion differed by cohort and determine whether Abe's policy made any difference.

11.5 About the Data Used in this Analysis

The *Labor Force Survey*, collected by the Statistics Office, is a nationally representative monthly survey covering about 40,000 households and about 100,000 individuals over the age of 15.[14] The earlier *Labor Force Special Survey* (*Tokutei Chosa*) collected detailed information on educational attainment, income, and employment before it was terminated in 2001. From 2002, the *Labor Force Survey* incorporated questions previously included in the *Labor Force Special Survey*. From January 2002, the survey began to use a longer questionnaire in the fourth visit that asked not only about labor force status but also about educational attainment, job tenure, and annual income in

the previous year for all relevant individuals in the household. It provides data on about 10,000 households, or 18,000 to 22,000 individuals every month. To look at long-term trends, the analysis of this chapter uses microdata of the *Labor Force Special Survey* conducted each February from 1988 to 2001 and data from the January to March *Labor Force Survey* from 2002 to 2018 to make a connected time series from 1988 to 2017.

Since the *LFS* series only has categorical data on the previous year's annual income, in twelve categories, the hourly wage rate is computed as the midpoint of the annual income category divided by the product of weekly work hours times fifty weeks.[15] One can identify managers in the *LFS* by using the variable on occupations.

I will also use another microdata set, the Ministry of Health, Labor and Wealth's *Basic Survey on Wage Structure*, 2002–2017. It is a survey of firms with more than five employees conducted every July. It collects data about salary, bonus, overtime pay, and work hours. The sample includes private enterprises and workplaces with more than five standard employees and public enterprises with more than ten standard employees; the sample size is as large as 1 million or more per year. In 2005, the questionnaire was reformed to be more sensitive to the increased number of nonstandard workers. Before 2005, it did not ask full-time workers if they were *seishain*. From 2005, it revised its questionnaire sheet and surveyed *seishain* workers and non-*seishain* workers, including those with fixed- term contracts. It also inquires as to whether one is working part-time. It has questions about managerial status, but only for those who work at firms larger than 100 employees.

11.6 Change in the Gender Wage Ratio and Wage Distribution

Figure 11.1 shows the time series average gender wage ratio for workers aged twenty-three to fifty-nine, displayed by educational category, using the *LFS*. Until 2012, the standard retirement age was sixty, so that, for the longer time series, excluding those sixty and over will more closely standardize the comparison.[16]

"Gender wage ratio, total" represents the average ratio of women's to men's wages among all workers, including both permanent contract standard workers and nonstandard employees. This ratio is increasing at the aggregate level. The average wage of females was around 50 percent of that of males in 1988, but the figure increased to around
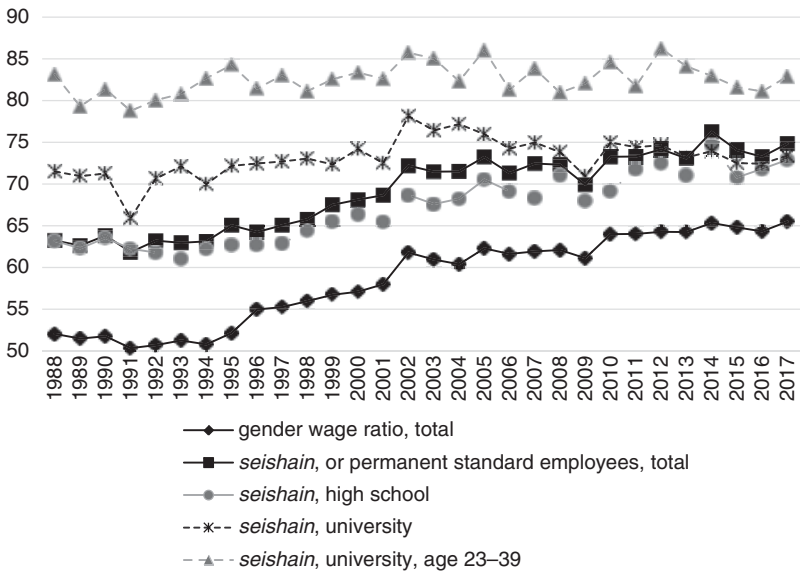
Figure 11.1 Female average wage as percent of male average wage, by educational attainment, age 23–59 when not otherwise specified
Source: Author's calculations using the *Labor Force Special Survey* 1988–2001 and *Labor Force Survey* 2002–2017 January–March

65 percent in 2017. When the figure is limited to those who have permanent *seishain* contracts, the gender wage ratio is higher, and the female wage, which was over 60 percent of the male wage in 1988, was approximately 75 percent in 2017. Because more women than men work as nonstandard workers, and because the average wage of non-standard workers is low, the overall gender wage ratio is smaller when considering all workers. Restricting the estimate to permanent stand-ard contract workers thus produces a higher estimate of the gender wage ratio.

Now consider the trends in the gender wage ratio by educa-tional attainment for permanent contract standard workers. The gender wage ratio was smaller in the late 1980s, especially among workers with less education. For those with high school education or less, the wage ratio was a little over 60 percent in 1988 and around 70 percent in 2017. In contrast, the gender wage ratio among university graduates who were *seishain* was higher

compared to the ratio among less educated workers in 1988. The average wage of university-educated females was about 70 percent of the corresponding male wage in 1988. However, the subsequent improvement was small, with the ratio remaining a little over 70 percent in 2017. This may be because female university educational attainment is increasing faster than that of males, so that the average age and average experience of female university graduates are lower overall. Therefore, I also calculated the ratio for university graduate workers aged twenty-three to thirty-nine, expecting an increase in gender wage ratio. Now the ratio is even larger, around 80 percent of the male wage in 1988, but it also stayed the same during this period, around 80 percent of the male wage in 2017. Therefore, the stubborn gap among university graduates cannot only be due to the average experience gap by gender.

The figures show that the overall gender wage ratio among *seishain* workers is increasing over time. And while it is larger among those with university education, the gap is closing more slowly for this group than for the less educated, among permanent-contract standard workers. The gap may be caused by difference in promotion.

I will now show the kernel estimation of the wage distributions of male and female workers in this section using selected years of the *Labor Force Survey*, first for permanent contract standard workers and then for nonstandard workers. Comparing Figures 11.2 and 11.3 – that is, the distribution of wages for permanent contract standard workers, by sex – women's wage distribution is much narrower than men's: men are more likely than women to have an hourly wage rate over 3,000 yen. Figures 11.4 and 11.5 show that, for nonstandard workers, the wage distribution is concentrated at the lower end for both males and females, though more so for females.

All the distributions are right-skewed. For both permanent contract standard workers and nonstandard workers, the female wage is moving to the right over time, and their wages are on average increasing. On the other hand, male workers' wage distribution is moving to the left and deteriorating. Despite these gap closing trends, the wage distribution difference between genders continues to be very large. Difference in promotion may be one of the
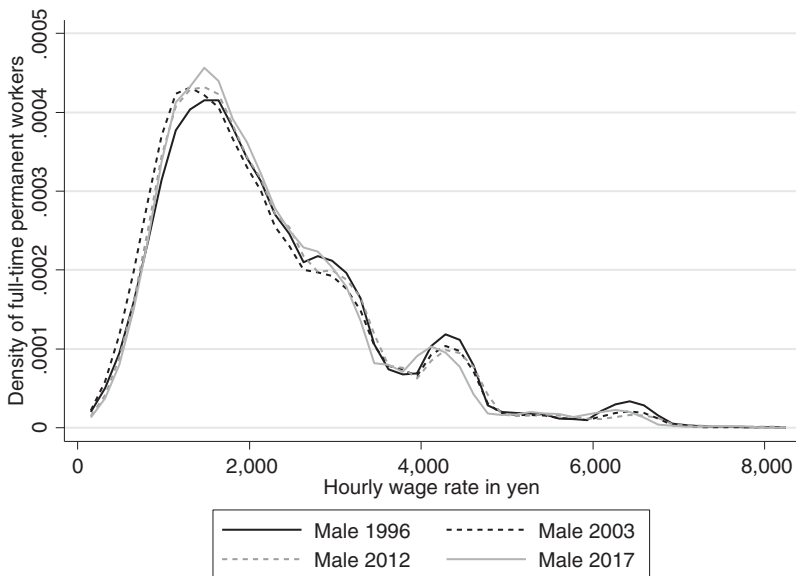
Figure 11.2 Wage distribution of males for permanent contract standard workers
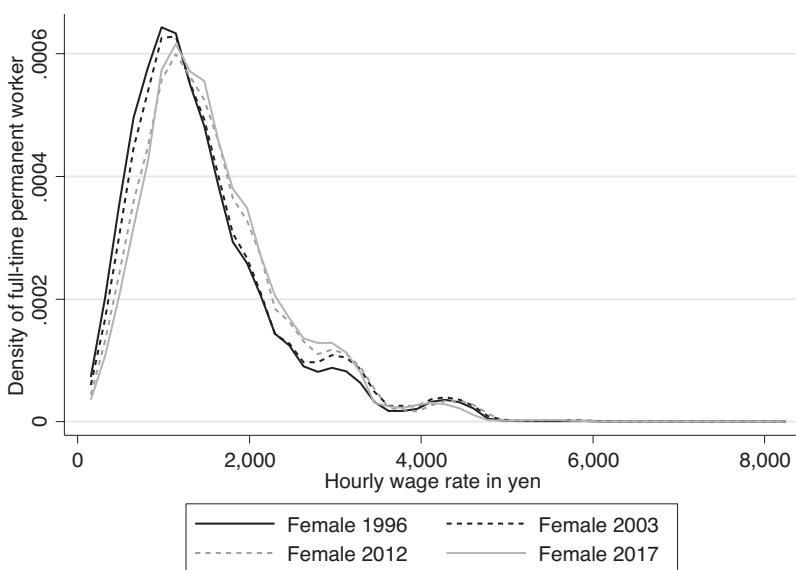

Figure 11.3 Wage distribution of females for permanent contract standard workers
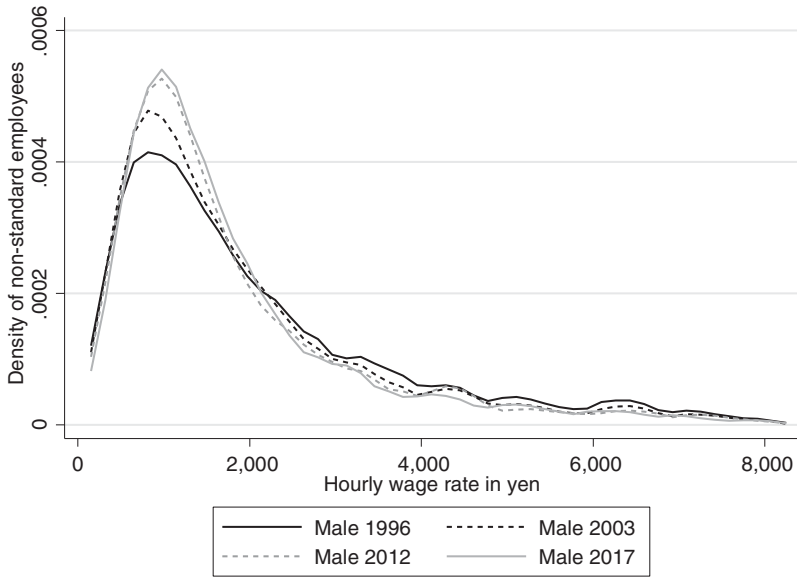
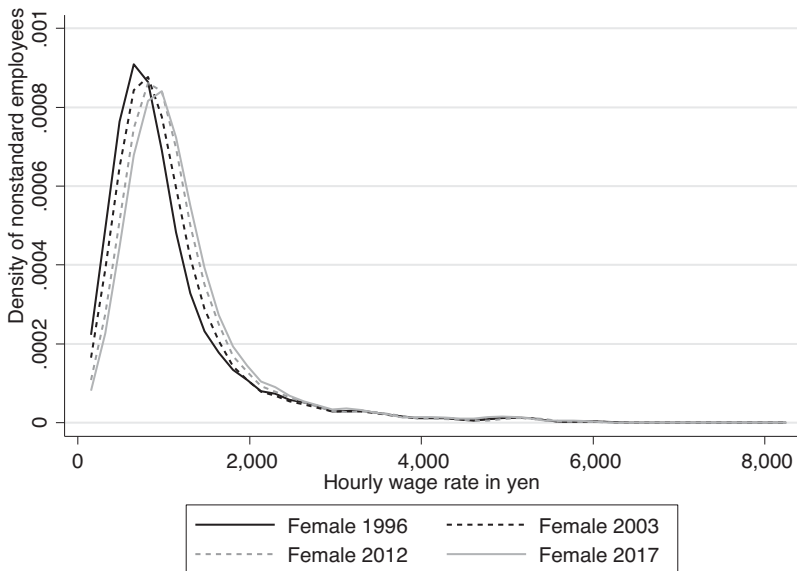**Figure 11.4** Wage distribution of males for all nonstandard workers

Figure 11.5 Wage distribution of females for all nonstandard workers

reasons for the large gender wage gap, which I will examine in the
next section.

11.7 Change in the Gender Composition of Managers

11.7.1 Definition of Managers

In this section, I will analyze the promotion difference by gender in the
Japanese labor market. As mentioned in Section 11.4.1, the Japanese
Cabinet Office had explicit targets for women in managerial positions,
for example, to increase the female proportion of kachō, section heads,
to 15 percent by 2020.

We need, however, to be careful about the definition of managers
and thus about the choice of data to employ. Ohi (2004) extensively
reviewed the Japanese governmental statistics concerning workers in
managerial positions using publicly available data. She noted two
different definitions of managers in the Japanese governmental statis-
tics. According to one definition, workers' occupations are classified as
"managers" if they manage subordinates. According to the other def-
inition, workers have a managerial title in the firm's salary table but
they may not have subordinates. Ohi calls the former "managers in
narrow definition" and the latter "managers in broader definition."
The *Census* and the *Basic Employment Survey* are household surveys
that use the narrow definition of managers. Ohi observes that the *Basic
Employment Survey* classifies about 500,000 persons in total as man-
agers; for firms with more than 100 employees, the number is 300,000
in 2002, or 2.0 percent of workers. In contrast, the *Basic Survey on
Wage Structure* collects data from firms, and, using the broad defin-
ition, it enumerates those who are titled as *buchō* (department head),
kachō (section head), *kakarichō* (section chief), *shokuchō* (foremen),
and *sonota shokkai* (other managers), among workers at firms with
more than 100 employees. Ohi shows from the public data that, in this
definition, managers altogether comprised 23.4 percent of all workers
in firms with more than 100 employees in 2004, or 3.40 million
employees.

The government uses both definitions when it employs targets to
increase the proportion of female managers. The Cabinet Office uses
the narrow definition in the *Labor Force Survey* to compare the gender
gap in management internationally. The Cabinet Office also uses the

Basic Survey on Wage Structure to examine the increase in the proportion of all managers who are women. However, their target is just the overall proportion of managers who are women. In the following section, I will look at the percentage of workers who are managers, separately by gender.

11.7.2 Change in the Ratio of Managers by Gender Using Different Definitions

Figure 11.6 was made by the author using the *Labor Force Survey*. While the governmental target only specifies the percentage of all managers who are female, I will examine different indicators – that is, the ratio of female managers among female workers and the ratio of male managers among male workers. In my view, it is important to
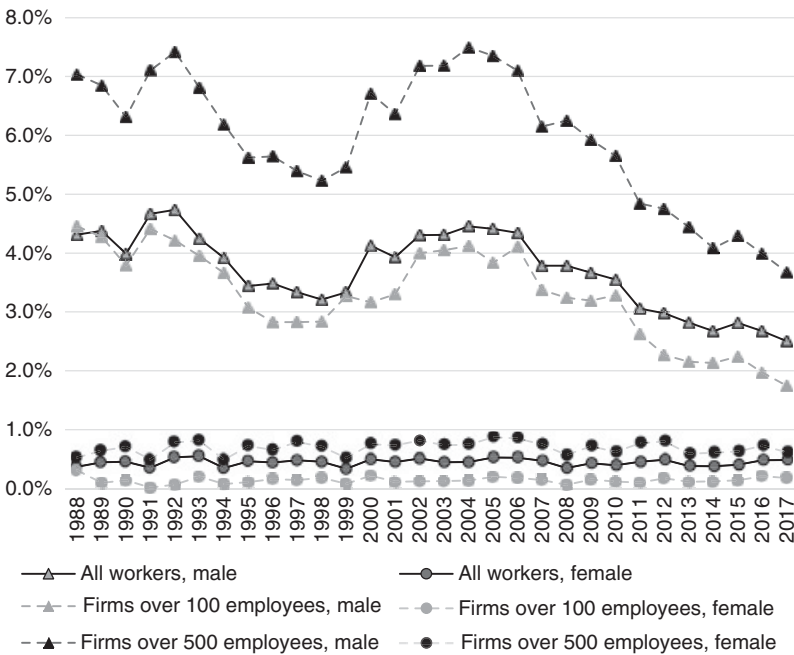
Figure 11.6 Ratio of managers in narrow definition among employees aged 22–59 by gender and firm size
Source: Made by the author from *Labor Force Survey* Series

compare the proportions of managers by gender, not just the proportion of all managers who are women, because the number of male workers is larger than the number of females. Ohi shows that the overall proportion of managers in private enterprises with more than 100 employees using the *Basic Employment Survey* (using the narrow definition) was 2.0 percent in 2002. The proportion for the same population using the *Labor Force Survey* (also using the narrow definition) was a comparable 2.5 percent in 2002 by my calculation. The two statistics differ, but the ratio of managers is similar because the definition of managers are both based on the Statistics Office's Japanese occupational standard classification. I show a longer time series after Ohi's study. Figure 11.6 shows the same trend as found in Ohi: the overall ratio of managers decreased from early 1990s to 1998. Then, as shown in triangle marks, the ratio of male managers among male employees went up after 2000, plateaued in the mid-2000s, then declined continuously after then. The decline was more notable for larger firms with more than 500 employees. The ratio of male managers to male workers was once over 7 percent, but it was below 4 percent by 2017. On the other hand, female managers among female workers, presented in circle marks, show that the ratio is just very low and unchanged, regardless of the firm size. Figure 11.6 also shows the ratio of managers of each gender by controlling firm size to over 100 employees to compare with broader definition shown in next two tables, which show a similar trend.

Table 11.1 was made by the author using the *Basic Survey on Wage Structure*, showing ratio of managers in the "broader category," as Ohi puts it. The definition of managers in this data is whether one is given managerial title in salary payment. It includes those who does not have any subordinates. The *Basic Survey on Wage Structure* only asks about managers for firms with more than 100 employees. Therefore, I divided the number of male and female managers by the number of male and female workers, respectively, at firms with more than 100 employees. We see that the ratio of managers – that is, including all department heads, *kachō*, *kakarichō*, foremen, and other managers – declined for males from 27.9 percent in 2002 to a low of 23.5 percent in 2017, while for females, the bottom was 3.2 percent in 200 and went up to 4.9 percent in 2017. The decline in ratio of males with managerial titles must have contributed to the sluggish male income after 2000s. Though ratio of male managers increased somewhat after 2014, it was still lower in 2017 than during the Lehman shock of 2008. In contrast, for females, an increase is evident from around 2013. We see that the increase in

Table 11.1 *Ratio of managers in broader definition (denominator, all workers)*

	All managers		Department heads, or *bucho*		Section heads, or *kacho*		Section chiefs, or *kakaricho*		Other managers	
	male	female	male	Female	male	female	male	female	male	female
2002	27.9%	4.0%	3.4%	0.1%	7.4%	0.6%	6.6%	1.3%	8.1%	1.7%
2003	27.7%	4.2%	3.4%	0.1%	7.5%	0.6%	6.6%	1.3%	7.8%	1.8%
2004	25.5%	3.2%	3.2%	0.1%	7.4%	0.6%	5.7%	1.1%	7.2%	1.2%
2005	26.1%	3.3%	3.6%	0.2%	8.0%	0.6%	6.7%	1.2%	6.0%	1.1%
2006	27.0%	3.8%	4.0%	0.2%	7.8%	0.8%	6.7%	1.3%	6.4%	1.4%
2007	26.1%	3.9%	3.4%	0.2%	7.8%	0.8%	6.3%	1.4%	6.3%	1.3%
2008	25.2%	3.8%	3.3%	0.2%	7.5%	0.8%	6.2%	1.3%	6.2%	1.4%
2009	24.1%	4.0%	3.4%	0.2%	7.2%	0.8%	5.8%	1.3%	5.8%	1.5%
2010	24.6%	3.9%	3.5%	0.2%	7.9%	0.8%	6.3%	1.4%	5.1%	1.3%
2011	23.7%	4.1%	3.4%	0.3%	7.1%	0.9%	5.9%	1.5%	5.3%	1.3%
2012	24.1%	4.0%	3.8%	0.3%	7.1%	0.8%	5.5%	1.3%	5.7%	1.5%
2013	23.7%	4.3%	3.3%	0.2%	7.1%	0.9%	5.8%	1.5%	5.8%	1.5%
2014	23.8%	4.6%	3.1%	0.3%	7.3%	1.0%	5.8%	1.5%	5.8%	1.6%
2015	24.5%	4.6%	3.4%	0.3%	7.5%	1.1%	6.2%	1.7%	5.7%	1.5%
2016	24.3%	4.9%	3.2%	0.3%	7.6%	1.1%	6.2%	1.9%	5.7%	1.5%
2017	23.5%	4.9%	3.1%	0.3%	7.2%	1.1%	5.9%	1.7%	5.7%	1.7%

Source: The Basic Survey on Wage Structure, author's calculation

female managers, especially for the lowest category of *kakarichō*, started around 2010 and for section heads, or *kachō*, around 2014.

However, the ratio shows a different picture if we limit the denominator to workers with permanent employment contracts as in Table 11.2.[17] Now when we look at the ratio of all managers for males, the first left column in Table 11.2, we do not see any decline in the ratio of male managers among permanent employment contract workers: it was 28.4 percent in 2002 and 29.4 percent in 2017.

The difference comes from the increase of fixed-term contract workers over years. The percentage of permanent employment contract workers among all workers at firms with more than 100 employees was 86.3 percent for males and 69.6 percent for females in 2005. For males, that ratio went down to 77.6 percent in 2017 and for females to 52.3 percent. When we compare the result of ratio of female managers among all workers with that among permanent employment contract workers, the ratio nearly doubles for females in 2017, 4.9 percent vis-à-vis 9.1 percent. For females, the increase in the ratio of managers is more evident among permanent contract workers but not as much when fixed-term contract workers are included. Table 11.2 shows that the ratio was 4.4 percent in 2002, while it rose to 9.1 percent in 2017. The proportion of female managers for the lowest category of *kakarichō* or section chief started around 2010 and for *kachō* or section heads around 2014, the same trend shown in Table 11.1.

Due to the continued rise over years of nonstandard employment among males, the ratio of all males who are managers between Table 11.1 and Table 11.2 differs only by 0.5 percentage points in 2002 but by 6 percentage points in 2017. For the ratio of male *kachō* or section heads, for example, the difference was only 0.1 percentage points in 2002 but 2 percentage point in 2017, meaning that in 2002 section heads managed mostly males who had permanent contracts, but in 2017 section heads had more male fixed-term contract workers to manage (see Figure 11.7).

Takeuchi (1995) investigated the labor practice at a large financial firm concerning the promotion of male entrants of the firm in the university graduation year of 1966. He showed that 99 percent of male university graduates of 1966 were promoted to section chief exactly at the fifth year of tenure. Then the tournament promotion to section heads was made from the age of thirty-four among section

Table 11.2 *Ratio of managers in broader definition by gender (denominator permanent full-time workers)*

	All managers		Department heads, or *bucho*		Section heads, or *kacho*		Section chiefs, or *kakaricho*		Other managers	
	male	female	male	Female	male	female	male	female	male	female
2002	28.4%	4.4%	3.5%	0.1%	7.5%	0.6%	6.7%	1.5%	8.2%	1.8%
2003	28.3%	4.6%	3.4%	0.2%	7.6%	0.7%	6.8%	1.5%	8.0%	1.9%
2004	26.4%	3.6%	3.3%	0.2%	7.6%	0.7%	5.9%	1.3%	7.5%	1.3%
2005	29.7%	5.3%	4.0%	0.3%	9.1%	1.1%	7.7%	2.0%	6.7%	1.7%
2006	30.8%	6.3%	4.1%	0.4%	9.0%	1.2%	7.8%	2.2%	7.4%	2.2%
2007	30.3%	6.6%	4.0%	0.4%	9.1%	1.4%	7.3%	2.3%	7.3%	2.2%
2008	29.6%	6.7%	3.8%	0.4%	8.9%	1.4%	7.4%	2.3%	7.2%	2.4%
2009	28.6%	6.9%	4.0%	0.4%	8.5%	1.4%	7.0%	2.3%	6.8%	2.5%
2010	29.3%	7.0%	4.1%	0.4%	9.4%	1.5%	7.6%	2.6%	6.1%	2.2%
2011	28.4%	7.2%	3.9%	0.4%	8.6%	1.6%	7.2%	2.7%	6.2%	2.2%
2012	29.7%	7.5%	4.7%	0.5%	8.8%	1.6%	6.9%	2.5%	7.0%	2.7%
2013	29.1%	8.2%	4.0%	0.5%	8.8%	1.7%	7.3%	2.8%	7.0%	2.9%
2014	29.7%	8.6%	3.8%	0.5%	9.1%	1.9%	7.3%	2.9%	7.2%	3.1%
2015	30.4%	8.7%	4.1%	0.5%	9.3%	2.0%	7.8%	3.2%	7.0%	2.7%
2016	30.5%	9.0%	4.0%	0.5%	9.6%	2.1%	7.8%	3.5%	7.0%	2.7%
2017	29.4%	9.1%	3.7%	0.5%	9.1%	2.1%	7.5%	3.2%	7.0%	3.0%

Source: The Basic Survey on Wage Structure, author's calculation
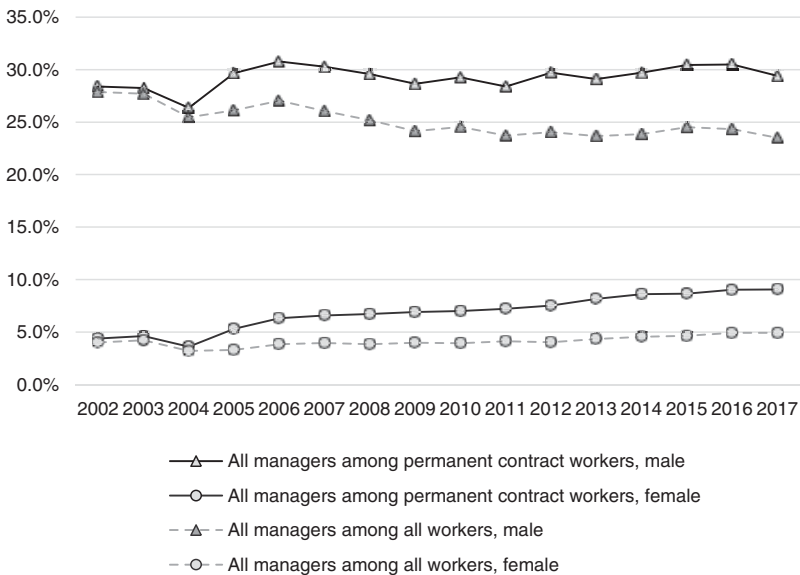
Figure 11.7 Gender ratio of managers among all workers and among permanent contract workers including non-*seishain*
Source: *The Basic Survey on Wage Structure*, author's calculation

chiefs, but with more variation in promotion age. Among section heads, promotion to vice department heads started in their forties. This is very old and anecdotal evidence for the entrants of the class of 1966 at a large financial firm. Labor practice may differ by industry. This type of age-based promotion, however, was also depicted by Imada & Hirata (1995) in their studies of the 1980s.

To see how such age-based promotion has changed, I looked at promotion using the *Basic Survey on Wage Structure* 2002–2017 for the birth cohort of 1965–1969 and for 1980–1984, for whom I can see the longest period of promotion by age groups. I added up the ratio of those in different managerial position for both birth cohorts. For the former group, they graduated from university around 1987–1994, about twenty years later than those in Takeuchi's study.

Figure 11.8 (A) left side shows for the 1965–1969 birth cohort males and the right side for females. The denominator is the data for those who are employed at firms with more than 1,000 employees and for university graduates who are permanent contract employees following

Takeuchi (1995). Figure 11.8 (B) presents the same information for the 1980–1984 birth cohort, who would have graduated from university around 2002–2008.

Figure 11.8 (A)'s left-side figure of male promotion shows that the ratio of higher-rank managers such as section heads and department heads increases with age as found in Takeuchi. We see that the ratio of section chiefs decreases for males with age as more males are promoted to higher positions. The right-side figure of female promotion finds that only 25 percent were any kind of manager by age forty to forty-four, and only 35 percent by age fifty to fifty-four. Nearly 70 percent of female university graduates in permanent employment were in nonmanagerial positions in their early fifties. On the other hand, the comparable figures were 60 percent and 63 percent for male university graduates. Less

Birth cohort 1965–1969, university graduates working at large firms

Males	Females

- Department heads (buchō)
- Section heads (kachō)
- Other managers
- Section chiefs (kakarichō)

Figure 11.8 (A) Ratio of those in different managerial positions by age group, birth cohort of 1965–1969, university graduates at large firms
Note: Among workers without fixed term of contract, including non-*seishain* employees, by age and birth cohort, in firms with more than 1,000 employees.
Source: *The Basic Survey on Wage Structure*, author's calculation

than 40 percent of males in their early fifties were in nonmanager-ial positions. Unlike men, the ratio of section chief does not decrease with age for women, presumably since promotion to section chief occurs at varied timing and at later ages for women compared with men. Note that the birth cohort of 1965–1969 is the cohort that entered firms after the enactment of the EEOL; however, there are still very large differences in promotion by gender.

Figure 11.8 (B) shows the promotion history of the younger birth cohort of 1980–1984. By age thirty-five to thirty-nine, more than 30 percent of university graduate males were managers of some kind, but the ratio was only 16 percent for university graduate females at age thirty-five to thirty-nine. The promotion speed was twice as fast for

Birth cohort 1980–1984, university graduates working at large firms

- Department heads (buchō)
- Directors (kachō)
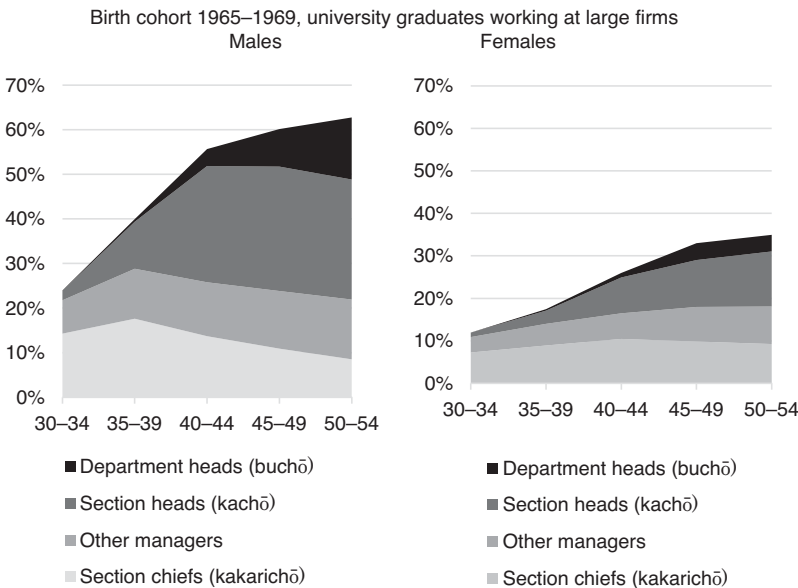- Other managers
- Section chiefs (kakaricho)

Figure 11.8 (B) Ratio of those in different managerial positions by age group, birth cohort of 1980–1984, university graduates at large firms
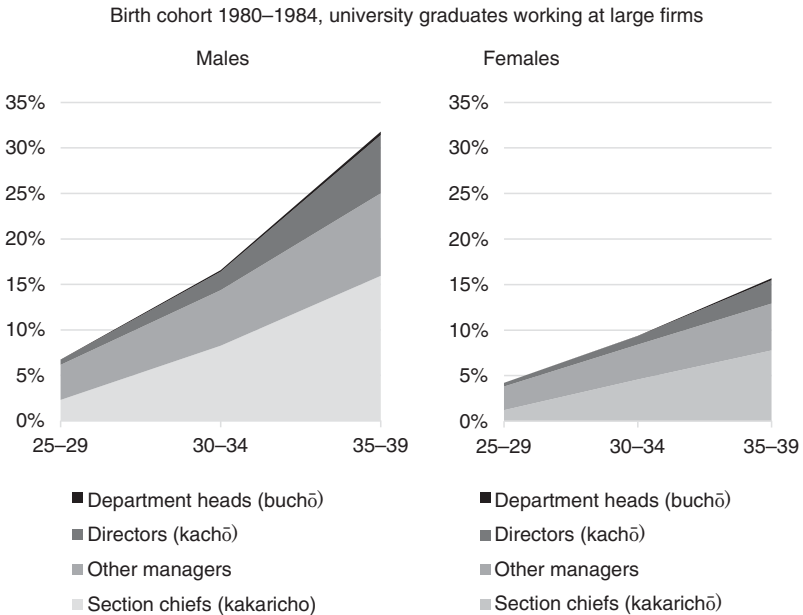Note: Among workers without fixed term of contract, including non-*seishain* employees, by age and birth cohort, in firms with more than 1,000 employees.
Source: *The Basic Survey on Wage Structure*, author's calculation

males for the birth cohort of 1980–1984, compared with females. The promotion gap in gender did narrow for the birth cohort of 1980–1984 compared with that of 1965–1969, not because women's promotion sped up but because men's promotion became slower.

However, changes in policies and labor practice over time also increased female promotion among younger birth cohorts. Figure 11.9 shows percentage of those in any managerial positions by age and by birth cohort among large firms but including all educational groups, not limited to university graduates. We clearly see from Figure 11.9 that, while the managerial ratio of males at age thirty-five to thirty-nine is lower for the 1980–1984 birth cohort than the 1965–1969 cohort, falling from 41 percent to 32 percent, the female ratio at age thirty-five to thirty-nine increased from 7 percent to 11 percent. The 1980–1984
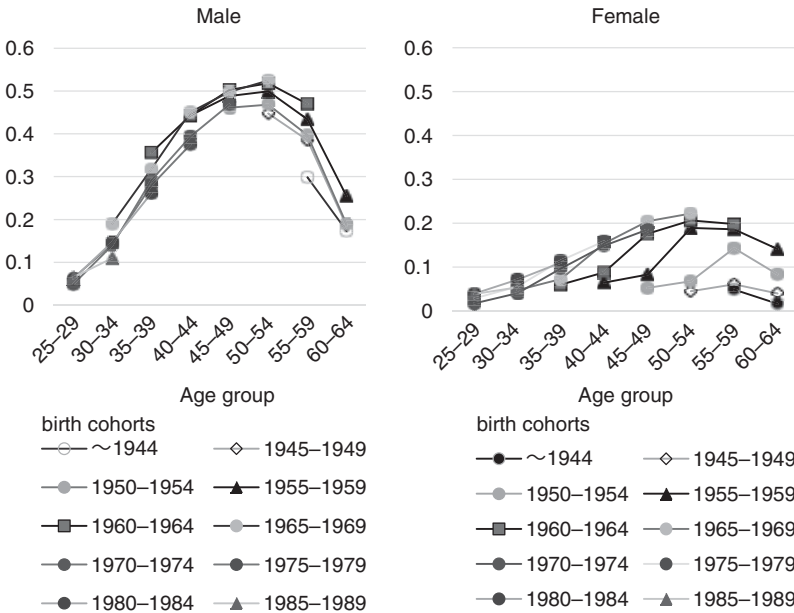

Figure 11.9 Percentage of workers in any managerial position at large firms by gender and by birth cohort

Note: Among workers without fixed term of contract, including non-*seishain* employees, by age and birth cohort, in firms with more than 1,000 employees.

Source: *The Basic Survey on Wage Structure*, author's calculation

birth cohort was in the twenty-nine to thirty-three age group in 2013, and thirty-two to thirty-six in 2016 when *Josei Katsuyaku Suisin Hō* was enacted, so they may be the target generation for promotion during the Abe administration. We also see that promotion of women was very slow up to birth cohort of 1955–59, who were the generation hired before EEOL, but sped up in the age group of 45–49 after then.

11.7.3 Differences in the Ratio of Managers at Policy-Affected Firms

Figures 11.10 and 11.11 let us explore whether there is any observable change in the proportion of females in managerial positions at times when the government nudged firms to change their practices concerning women employees. The first of these statutory nudges, the Law to Support the Next Generation of 2003, mandated that firms with more than 300 employees assess their firm practices for compatibility with family caregiving responsibilities starting in 2004. Abe initiated the discussion of the second such nudge in 2013. It was adopted as *Josei Katsuyaku Suishin Hō*, the law in 2015 and implemented in 2016, also mandated for firms with more than 300 employees. Figure 11.10 depicts the proportion of men and women who attained section chief or *kakarichō*, the lowest
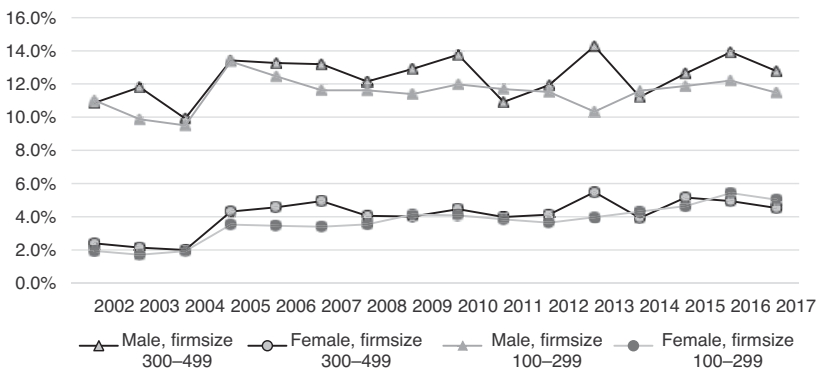
Figure 11.10 Ratio of section chief among permanent contract employees by gender, comparison of those working at firms with 100–299 employees to those with 300–499

Note: Age twenty-seven to forty-three, permanent contract employees only.

Source: *The Basic Survey on Wage Structure*, author's calculation
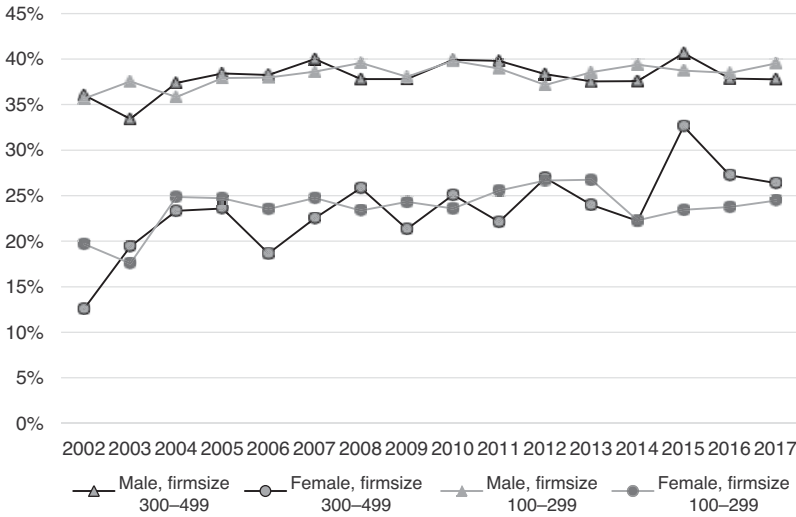
Figure 11.11 Ratio of section heads among low ranking managers by gender, comparison of those working at firms with 100–299 employees to those with 300–499

Note: Age twenty-seven to fifty-four, permanent contract employees only.
Source: *The Basic Survey on Wage Structure*, author's calculation

managerial position, by firm size. The denominator is the number of permanent employees, since I assumed the change would be most evident among long-term employees as most human resource departments target their policy toward such workers. For longest time series, permanent employee status is only available, which is close to the *seishain* definition. The change should also be more evident at the lowest managerial position. However, when differentiating between firms with 300–499 employees and those with 100–299 employees, the changes are not much different by firm size. We do see some increase in promotion for females in 2004 and 2013, but we also see a similar trend for males. Moreover, the change in Figure 11.10 after 2003 only raised the percentages one time, after which the trend flattened. Casual review of Figure 11.10 does not seem to identify a significant effect of the law.

Figure 11.11 illustrates the corresponding data for section heads, among those who are either section chief or section heads. Here, the impact for year 2015 to 2016 among females is more notable, and the law could have impacted female promotion to section heads among section chiefs.

11.8 Method of Estimation

My central question for this chapter is whether women had a greater probability of attaining managerial employment during the Abe administration. I will also ask whether females are treated differently compared with males in promotion. I will use the broad definition of managers in the *Basic Survey on Wage Structure*. The broad definition of managers is more connected to a firm's wage table than in managing subordinates, so that the promotion difference may give an explanation to the large gender wage gap. My dependent variable, Manager, equals 1 if given any type of managerial position, and Manager equals 0 if not. I will estimate two probit equations for this dependent variable, Equations 1 and 2.

$$
\begin{aligned}
Manager_i = {} & a_1 + b_1 Education_i + b_2 female * Education_i \\
& + c_1 Age_i + c_2 female * Age_i + d_1 Tenure_i + d_2 female * Tenure_i \\
& + e_1 female + f_1 (years\ of\ policy\ 2013\ to\ 2017) \\
& + f_2 (years\ of\ policy\ 2016\ to\ 2017) \\
& + f_3 female * (years\ of\ policy\ 2013\ to\ 2017) \\
& + f_4 female * (years\ of\ policy\ 2016\ to\ 2017) \\
& + g_2 firmsize_i + h_1 seishain_i + h_2 female * seishain_i \\
& + i_1 year\ dummy + u_i
\end{aligned}
$$

$$(1)$$

In Equation (1), I have a policy period dummy for the years 2013 to 2017, interacted with gender, to see if women had a greater probability of becoming managers during the Abe administration. I also include a 2016–2017 year dummy interacted with gender, as this is when *Josei Katsuyaku Suisin Hō* came into effect. The *Josei Katsuyaku Suisin Hō* was passed in 2015 and implemented from April 2016. For this reason, I added the year dummy 2016–2017 and crossed it with the female dummy. If their coefficients, f_3 and f_4, are significantly positive, it means that, during the Abe administration, the probability of a female being a manager increased, especially after implementation of the law. Gender, and the two periods of the Abe administration, are also tested for direct effects.

Other coefficients are also important. We know from previous case studies of promotion policies in various large firms (Imada & Hirata 1995; Takeuchi 1995; Hanada 1987) that being male, accumulating tenure, reaching a certain age, and being a university graduate are important for attaining managerial positions. Being *seishain* is a prerequisite. Then lower-level managers compete for the next highest

rank. Thus I will also see whether educational degrees, age, a *seishain* contract, and tenure affect males and females differently. Finally, I will control for individual years in this period, firm size, and year.

$$
\begin{aligned}
Manager_i = {} & a_1 + b_1 Education_i + b_2 female * Education_i + \\
& c_1 Age_i + c_2 female * Age_i + d_1 Tenure_i + d_2 female \\
& *Tenure_i + e_1 female + f_1 (years\ of\ policy\ 2013\ to\ 2017) \\
& + f_2 female * (years\ of\ policy\ 2013\ to\ 2017) \\
& + g_1 (firmsize100 - 299) + g_2 (firmsize100 - 299) * female_i \\
& + g_3 (firmsize100 - 299) * (years\ of\ policy\ 2013\ to\ 2017) \\
& + g_4 (firmsize100 - 299) * (years\ of\ policy\ 2013\ to\ 2017) * female_i \\
& + h_1 seishain_i + h_2 female * seishain_i + i_1 year\ dumy + u_i
\end{aligned}
$$

$$(2)$$

In Equation (2), I use variation in firm size to see if Abe's policy *Josei Katsuyaku Suisin Hō* had a statistically significant effect on increasing the probability of female managers at targeted firms. The term that tests for this effect is a cross term with firm size 100–299, the policy period, and gender. (The dataset does not include information on firms with fewer than 100 employees.) If Abe's policy was effective for increasing female promotion, then g_4 should be negative and significant, since the law did not require firms of size 100–299 to make the gender statistics public or to make scheduled plans for active participation of female employees. The policy was actually enacted in 2015 and implemented in 2016, but there were talks about this policy from 2013 and a proposal to the Diet in 2014; therefore, I made a policy dummy spanning the years 2013 to 2017.

Finally, I estimated Equations 1 and 2 for *seishain* workers only, while dropping the terms *seishain* and *seishain*female*.

11.9 Results of the Estimation

11.9.1 Promotion of Females, Long-Term Employment Practice, and the Effect of Abe's Policy

The first set of results in Table 11.3, on the left-hand side, shows the estimated marginal effects of Equation 1 for all workers. We can say that the promotion of females went up significantly by 1 percent during the 2013–2017 Abe administration period and additionally by 0.5 percent during the 2016–2017 period when *Josei Katsuyaku Suisin Hō* was implemented.

However, this progress must be considered in the context of traditional Japanese employment practice. While higher education and higher age both increase the probability of promotion to managerial positions, the effects of education and age for females are significantly less than those for males. The probability of becoming managers strongly increases with age and peaks at ages forty-five to fifty-four, but the effect is also around 10 percent lower for females.

As shown in on the left side of Table 11.3, being in a *seishain* position greatly increases the probability of promotion. Comparing the estimates for all workers and for *seishain* only, the gender difference in advancement to manager by age and education is even more pronounced among *seishain*, especially in their forties and fifties. Males in their fifties are nearly 60 percent more likely to be a manager than males in their teens or in early 20s, but the effect is 13 percent less for females in their fifties.

Tenure effect shows that if women stay in the firm for a long period, tenure square term shows that females tenure will be compensated in promotion a little higher than males.

The long-term employment practice of *seishain* evidently negatively affects the allocation of firm specific human capital investment to females. Firms may be concerned that females will quit their work when they form families, while such conduct is less likely for males. This in turn generates statistical discrimination against females in hiring and promotion. According to the results, females were more rewarded only after staying with the firm for a long period, only after many males surpassed them in promotion.

Interesting results include the marginal effects of firm size, which show that promotion is less likely at larger firms compared to smaller firms when other factors are controlled for. The year dummies reveal that promotion was slow during the recession of 2002 to 2006 for both sexes relative to 2012. These were years of bad macroeconomic performance, with the economy in deep recession in 2003. Additionally, from 2002 to around 2010, females were clearly less likely to be promoted to managers than males after considering age, education, tenure and other variables. However, the sign on the coefficient of females shifted to positive in 2011 and became significantly positive during Abe's cabinet, 2013–2017, as compared with 2012.

In summary, the first column of Table 11.3 shows that education, tenure, and age are significantly less valued for females for promotion in long-term employment. However, there are more forces to push

Table 11.3 *Probit analysis of being a manager, marginal effects*

	All employees, firm size over 100		*Seishain* employees, firm size over 100	
	Coefficient	t values	Coefficient	t values
Female	-0.0096	–1.2	–0.0099	–1.0
Ed 14 yrs	0.0751	148.1 ***	0.0912	148.0 ***
Ed 16 yrs or more	0.1476	501.9 ***	0.1763	497.8 ***
Ed 14 yrs* female	–0.0105	–13.5 ***	–0.0135	–13.8 ***
Ed 16 yrs or more* female	–0.0207	–28.0 ***	–0.0252	–26.9 ***
Age 21–24	0.0412	7.5 ***	0.0465	7.0 ***
Age 25–29	0.1629	26.6 ***	0.1888	26.2 ***
Age 30–34	0.3430	49.4 ***	0.3824	49.0 ***
Age 35–39	0.4771	65.4 ***	0.5160	64.8 ***
Age 40–44	0.5610	75.5 ***	0.5945	74.7 ***
Age 45–49	0.5966	79.6 ***	0.6247	78.4 ***
Age 50–54	0.5984	79.6 ***	0.6231	78.0 ***
Age 55–59	0.5522	73.0 ***	0.5743	70.8 ***
Age 60–64	0.5104	65.4 ***	0.4839	57.3 ***
Age 21–24* female	–0.0122	–1.5	–0.0153	–1.5
Age 25–29* female	–0.0386	–5.3 ***	–0.0500	–5.5 ***
Age 30–34* female	–0.0681	–10.5***	–0.0868	–10.4***
Age 35–39* female	–0.0893	–15.3***	–0.1138	–15.0***
Age 40–44* female	–0.0997	–18.2***	–0.1268	–17.7***
Age 45–49* female	–0.1028	–19.3***	–0.1295	–18.4***
Age 50–54* female	–0.1051	–20.2***	–0.1315	–18.9***
Age 55–59* female	–0.1047	–20.2***	–0.1301	–18.7***
Age 60–64* female	–0.1073	–21.4***	–0.1326	–19.2***
tenure	0.0130	266.2***	0.0155	248.4***
tenure^2	–0.0002	–144.2***	–0.0002	–124.8***
tenure* female	–0.0007	–6.3***	–0.0002	–1.3
tenure^2* female	0.0001	17.9***	0.0000	10.1***
year2002	–0.0085	–13.0***	–0.0110	–13.7***
year2003	–0.0105	–16.3***	–0.0135	–16.8***
year2004	–0.0205	–32.4***	–0.0256	–32.5***
year2005	–0.0037	–5.3***	–0.0067	–7.8***
year2006	0.0055	7.9***	0.0050	5.8***
year2007	0.0136	18.9***	0.0155	17.4***
year2008	0.0089	12.4***	0.0096	10.8***
year2009	0.0030	4.2***	0.0022	2.5***
year2010	0.0030	4.2***	0.0023	2.6***
year2011	–0.0052	–7.3***	–0.0070	–8.0***

Table 11.3 (*cont.*)

	All employees, firm size over 100		Seishain employees, firm size over 100	
	Coefficient	t values	Coefficient	t values
year2002* female	−0.0230	−14.3***	−0.0291	−14.5***
year2003* female	−0.0160	−9.8***	−0.0200	−9.9***
year2004* female	−0.0237	−14.7***	−0.0298	−14.8***
year2005* female	−0.0156	−9.5***	−0.0193	−9.3***
year2006* female	−0.0117	−7.1***	−0.0161	−7.7***
year2007* female	−0.0130	−8.0***	−0.0166	−8.0***
year2008* female	−0.0017	−1.0	−0.0031	−1.4
year2009* female	−0.0041	−2.4**	−0.0060	−2.8**
year2010* female	−0.0030	−1.8*	−0.0035	−1.6
year2011* female	0.0017	1.0	0.0012	0.5
year2013–2017	−0.0043	−7.6***	−0.0051	−7.2***
year 2013–2017* female	0.0119	8.7***	0.0131	7.6***
year2016–2017	−0.0033	−7.6***	−0.0035	−6.4***
year 2016–2017* female	0.0056	5.6***	0.0072	5.7***
firm5000–	−0.0429	−114.6***	−0.0538	−114.2***
firm1000–4999	−0.0290	−76.2***	−0.0362	−76.0***
firm500–999	−0.0149	−34.4***	−0.0185	−34.3***
firm 100–299	0.0089	22.4***	0.0114	23.1***
seishain	0.1253	249.9***		
seishain * female	0.0034	2.5***		
Pseudo r^2	9,893,284		8,528,542	
observation	0.2643		0.2325	

Note: statistically significant *** 1 percent, ** 5 percent, * 10 percent.

women into managerial positions after 2013 and even more so in 2016–2017 compared to 2013–2014, although the marginal effect was small.

11.9.2 Using Variation in Firm Size to Assess Abe's Policy

Table 11.4 shows the effect of Abe's policy by using Equation 2, which examines differences in firms' response to the policy change by firm size. *Josei Katsuyaku Suisin Hō* did not mandate firms with 100–299 employees to make action plans. However, firms with more than 300

Table 11.4 *Estimate of Abe's policy on female promotion by firm size*

	All employees, firm size over 100		*Seishain* employees, firm size over 100	
	Coefficient	t values	Coefficient	t values
Female	–0.0165	–6.0 ***	–0.0199	–6.5 ***
Ed 14 yrs	0.0788	154.4 ***	0.0955	154.4 ***
Ed 16 yrs or more	0.1478	502.4 ***	0.1763	498.1 ***
Ed 14 yrs*female	–0.0136	–17.4 ***	–0.0173	–17.8 ***
Ed 16 yrs or more* female	–0.0221	–29.7 ***	–0.0268	–28.5 ***
Age 25–29	0.1137	68.4 ***	0.1364	68.7 ***
Age 30–34	0.2861	153.9 ***	0.3267	153.7 ***
Age 35–39	0.4205	211.6 ***	0.4638	210.5 ***
Age 40–44	0.5073	246.8 ***	0.5468	244.5 ***
Age 45–49	0.5450	260.4 ***	0.5799	256.8 ***
Age 50–54	0.5487	260.8 ***	0.5802	255.7 ***
Age 55–59	0.5030	237.7 ***	0.5315	230.4 ***
Age 60–64	0.4608	195.5 ***	0.4378	163.0 ***
Age 25–29* female	–0.0294	–13.2 ***	–0.0384	–13.8 ***
Age 30–34* female	–0.0615	–31.5 ***	–0.0781	–31.4 ***
Age 35–39* female	–0.0845	–47.7 ***	–0.1072	–46.7 ***
Age 40–44* female	–0.0959	–57.4 ***	–0.1213	–55.3 ***
Age 45–49* female	–0.0994	–60.8 ***	–0.1245	–57.5 ***
Age 50–54* female	–0.1021	–63.4 ***	–0.1270	–59.1 ***
Age 55–59* female	–0.1021	–62.6 ***	–0.1261	–57.5 ***
Age 60–64* female	–0.1060	–57.5 ***	–0.1307	–48.6 ***
tenure	0.0130	263.9 ***	0.0154	246.1 ***
tenure^2	–0.0002	–146.1 ***	–0.0002	–127.1 ***
tenure* female	–0.0007	–6.0 ***	–0.0001	–1.0
tenure^2* female	0.00005	18.0 ***	0.00004	10.4 ***
year2002	–0.0084	–12.8 ***	–0.0108	–13.4 ***
year2003	–0.0102	–15.7 ***	–0.0131	–16.3 ***
year2004	–0.0200	–31.4 ***	–0.0250	–31.6 ***
year2005	–0.0029	–4.2 ***	–0.0058	–6.7 ***
year2006	0.0064	9.1 ***	0.0059	6.9 ***
year2007	0.0142	19.6 ***	0.0162	18.1 ***
year2008	0.0094	13.1 ***	0.0102	11.4 ***
year2009	0.0033	4.6 ***	0.0025	2.8 ***
year2010	0.0036	5.1 ***	0.0030	3.4 ***
year2011	–0.0047	–6.6 ***	–0.0065	–7.4 ***
year2002* female	–0.0216	–13.3 ***	–0.0273	–13.5 ***
year2003* female	–0.0147	–9.0 ***	–0.0184	–9.0 ***

Table 11.4 (*cont.*)

	All employees, firm size over 100		*Seishain* employees, firm size over 100	
	Coefficient	t values	Coefficient	t values
year2004* female	−0.0226	−14.0 ***	−0.0285	−14.1 ***
year2005* female	−0.0143	−8.6 ***	−0.0177	−8.4 ***
year2006* female	−0.0114	−6.9 ***	−0.0157	−7.6 ***
year2007* female	−0.0133	−8.1 ***	−0.0169	−8.1 ***
year2008* female	−0.0012	−0.7	−0.0025	−1.2
year2009* female	−0.0041	−2.4 **	−0.0060	−2.8 ***
year2010* female	−0.0030	−1.8 *	−0.0035	−1.6 *
year2011* female	0.0016	0.9	0.0011	0.5
year2013–2017	−0.0031	−5.5 ***	−0.0031	−4.4 ***
firm 100–299	0.0426	119.1 ***	0.0531	120.7 ***
year 2013–2017* female	0.0140	10.2 ***	0.0157	9.2 ***
firm100–299* female	−0.0084	−10.3 ***	−0.0106	−10.4 ***
firm100–299* year2013–2016	−0.0094	−16.0 ***	−0.0126	−17.1 ***
firm100–299* female* year2013–2017	0.0023	1.7 *	0.0033	1.9 *
seishain	0.1262	251.3 ***		
seishain*female	0.0022	1.6		
Pseudo r²	9,893,284		8,528,542	
observation	0.2644		0.231	

Note: statistically significant *** 1 percent, ** 5 percent, * 10 percent.

employees were mandated to do this. The law was implemented in 2016, but it was discussed in 2014 and passed in 2015, so I chose to examine the effect of the law throughout the 2013–2017 period.

If the cross term of the firm size 100–299, the Abe policy period, and being female is positive and barely significant, that means that women working at firms with 100–299 employees were slightly more likely to be promoted to manager during 2013–2016 relative to larger firms – or, to put it differently, that firms with more than 300 employees did not have more females promoted to managers during the Abe cabinet.

The results do not show that females had a significantly higher probability of promotion at mandated firms during the Abe administration period; that is, overall promotion to managers did not accelerate specifically at firms with more than 300 employees during this

period. This is understandable considering the weak type of the mandate. However, from Table 11.3 we did see that female promotion accelerated more generally during the Abe administration, though the marginal effects were small. The descriptive statistics is shown in the Appendix.

11.10 Discussion and Conclusion

This paper has reviewed changes in policies and law in Japan after 1980s to today that aimed to increase the number of women in the labor force, promote females in management, and close the gender wage gap. We constructed a long-term microdata series using the *Labor Force Special Survey* (*Tokutei Chosa*) and *Labor Force Survey* to look at long-term trends from 1988 to 2017. Since the *LFS* only gives data on managers in narrow definition, we also used the *Basic Survey on Wage Structure* of the Ministry of Health, Labor, and Welfare to look at those in managerial positions in the broad definition, by gender.

Previous research of myself has shown that, after around 2009, work continuation of new mothers as *seishain* started to increase with the introduction of a short hour option that firms were mandated to make available for workers with infants. This trend of greater work continuation as *seishain* accelerated during Abe's administration and his Womenomics policy of 2013. New mothers' continuing labor participation as *seishain* will help to reduce the gender pay gap in the long run, since, once females quit their permanent standard employment at marriage or at childbirth, most only re-enter the labor market as poorly paid hourly nonstandard employees.

However, previous research did not reveal whether those females, who continued their work as *seishain*, would be as likely to be promoted as males. Therefore, this paper has investigated the managerial and career prospects of females. The paper showed that the closing of the gender gap in managerial positions was still quite limited, although some improvement was shown during Abe's policy period.

We found that the closing of the promotion gap has been slow even among the more highly educated *seishain* workers. This paper showed that there is a profound gender difference in the evaluation of age, education, and tenure for promotion to manager in Japan. We did find

some acceleration of women's accession to managerial positions during the 2013–2017 period.

Even though a menu of policies was rolled out, most were aimed at reducing the opportunity cost of having children. They were not targeted at making fundamental changes to the Japanese long-term employment system.

The results found in this chapter indicates that further drastic change is required in labor law and labor practice to close this large gender wage gap and the gap in promotion prospects.

Why are the gaps still so large? A substantial proportion of women may be hired in the slow track but not the fast track, compared to male university graduates. Another reason may be lack of training, even though one might be in the same track as males. One can only become manager through adequate experience and training. If such opportunity is offered to females only in a limited way, even if the law nudges firms to promote women, firms will have a harder time finding adequate candidates. In addition, often women choose the slow track, as long work hours and company expectations of relocation may harm their family life. In addition, more *seishain* women than men are taking one year of leave at childbirth and then returning to work as short work-week employees after the leave. This may also hinder their promotion.

We found that gender-based evaluation is greatly evident in the Japanese long-term employment system, which was once highly praised as the cause of strong economic performance in Japan in the 1980s. For more women to make the best of their capacity, the Japanese type of long-term employment system needs to undergo further change.

To conclude, Abe's policy had a statistically significant effect on increasing women's representation in management for companies in general. This being said, the gap in gender is still very large. A more fundamental change in labor practice is needed to close the large gender wage gap and the gender gap in managerial positions. This should include a change in hiring practice, a change in training, and a change in relocation practices, as well as reforming the EEOL.

Notes

1. "*Seishain*" in Japan is sometimes translated as "regular full-time employment."

However, "*seishain*" is often associated with a work contract without termination. Moreover, wages are often expected to increase with tenure, and higher work commitment is also expected. The same workers are also often referred to as "standard" employees. Therefore, I will use "permanent standard employee," "standard worker," or "long-term employee" as translations of "*seishain*," as well as using the term itself.

2. Most of this research is based on interviews that have been published only in Japanese, including my own research, as cited in the sections that follow.
3. For the first time in December 2007, the governmental document gave a specific target and timeline – 38 percent in ten years – for the percentage of registered childcare places for infants, in the Report of the National Council for Pathways to Supporting Children and Families (*Kodomo to Kazoku wo Oensuru Nihon Juten Senryaku Kaigi*). The national average of registered childcare places for children below three years of age was then 20 percent, but lower in most major urban areas. This report was adopted as a reference material of the National Social Security Council Report (*Shakai Hosho Kokumin Kaigi*) of November 2008 and then recognized 38 percent in ten years as a national target in the Cabinet Office's Medium Term Plan of Economy and Finance (*Keizai Zaisei no Chuchoki Hoshin to 10 nen Tembou*) of December 2008.
4. The 2020–30 target was initially decided in June of 2003 by the Gender Equality Promoting Head Meeting, *Danjo Kyodo Sanaku Suisin Honbu*. The Council on Gender Equality in 2007 explained that "women leaders" meant representatives at the national and local congress, managers over the rank of *kachō* at enterprises, and professionals who need high professional knowledge. The percent of women among private corporate managers was described as still 6.5 percent as of 2009 but was targeted to be 10 percent by 2015 in the third Basic Plan for Gender Equality.
5. For example, in 2013 the proportion of women was 7.9 percent in the House of Representatives and 18.2 percent in the House of Councilors. Women were 6.9 percent of department managers in private enterprises in 2011. In 2010, women were 18.9 percent of medical doctors, 5.6 percent of Ministers, and 25.7 percent of new hires of national bureaucrats in the fast promotion track.
6. The Gender Equality Bureau Cabinet Office showed in their White Paper of 2011 that among the 41,973 board members of 3,608 listed firms, only 515 were women, comprising only 1.2 percent. In manufacturing, construction, finance, and transportation, women

board members comprised less than 1 percent. *Toyokeiai Yakuin Shikiho* shows the number of women board members among listed firms as of July each year. The number was 538 or 1.2 percent in 2006 and remained at 1.2 percent until 2009. In 2011, it was 585 or 1.4 percent and in 2012, 630 or 1.6 percent. Many large firms did seem to respond to Abe's request. In 2013, it was 691 or 1.8 percent; in 2014, it rose to 816 and 2.1 percent; and in 2015, 1,142 and 2.8 percent. For example, among 92 listed banks, there were no women on the board among 772 executive board members in 2011. Even when non-executive directors and audit and supervisory board members are included, among 1,370 members, only 6, or 0.4 percent, were female in 2011. The figure of female officers in listed companies rose to 4.1 percent as of 2018 according to the Gender Equality Bureau.

7. Firms must collect and publish one type of data among fourteen options. The options include the female ratio of employees, the gender gap in average tenure, the gender gap in application to hiring ratio, monthly overtime work hours, and the gender gap in management. Firms are asked to analyze the reason for the gender gap. Action plans should have targets and planned periods, which must be made available to the public and registered at the local MHLW office. The action plan can be, for example, increasing male childcare leavers and providing a model for diverse career plans. As many as 12,236 firms registered their gender statistics on the MHLW's database as of May 2020 May. Also 15,288 firms made open their action plan on the same database: http://positive-ryouritsu.mhlw.go.jp/positivedb/. From April 2020, the law was renewed, and these firms must disclose at least two, but yet just two.

8. From April 2020, the law was renewed, and firms with more than 100 employees will be required to publicize their action plans.

9. To be recognized, the hiring ratio and tenure should be about the same for men and women, average work hours should be less than fewer hours, the ratio of female managers should be above the industry average, and the ratio of promotion to *kachō* or middle managerial positions from section chief should be about the same by gender. In addition, firms should demonstrate the development of diverse career paths by allowing changes from the slow track to the fast track within the company or by recruiting *seishain* from nonstandard employees. The *Eruboshi* recognition has three stages, and the recognition may be obtained based on their present status.

10. There will be a budget for preferred procurement of around 5 trillion yen according to the Cabinet Office, even though *Eruboshi* comprise one among lists for preferred points.

11. The net decline in after-tax household income due to the dependent spousal tax deduction when spouses work longer hours became a political issue, so that, in 1987, a new spousal special deduction was introduced to prevent the decline in net household income that results due to the increase of income tax of husbands. Yet many firms gave spousal allowances as a supplement to the main income earners, and since this allowance was often linked to one's spouse not having taxable income, that spouses still adjusted their work hours so that income tax should not be levied.

12. Toyota, for example, announced in 2016 that it would abolish its spousal allowance step by step in five years and would instead offset the decline in salary by increasing the children's allowance.

13. As to the issue of social security tax for a dependent spouse, the government is not overtly making any changes. However, the government introduced new rules in October 2016 that following part-time workers should be taxed the social security insurance for employees and also be given rights to the employee pension. This is for those who earn more than 1.06 million a year, worked twenty hours per week, and are not students, but it is limited to those who work at firms with more than 500 employees. The government, in this way, is hoping to decrease the fraction of dependent wives who are in the social security tax category of "dependent spouses" despite that fact that they are short hour workers. In 2019, Pension Law reform further mandated that the rule for part-time workers will be expanded to firms with more than 100 employees in 2022, and further to those with more than 50 employees in 2024.

14. Details of the sampling methods, estimation methods and the sampling errors of the estimates used for the *Labour Force Survey* are available in English: www.stat.go.jp/english/data/roudou/pdf/samplerr.pdf, accessed September 13, 2017.

15. The question about annual income in the previous year offers respondents twelve possible answers: 0 yen; >0 yen and less than 0.5 million yen; ≥0.5 yen and <0.99 million yen; ≥1 million yen and <1.49 million yen; ≥1.50 million yen and <1.99 million yen; ≥2.00 million and <2.99 million yen; ≥3.00 million and <3.99 million yen; ≥4.00 million yen and <4.99 million yen; ≥5.00 million yen and <6.99 million yen; ≥7.00 million yen and <9.99 million yen; ≥10.00 million yen and <14.99 million yen; 15.00 million yen or over. Because only upper and lower bounds are available, the midpoint in each category is used to represent income. For the top income group, 17.00 million is used. Estimates of the wage rate are obtained by dividing the annual income by the number of work hours in the

last week of the month multiplied by 50. The bottom and top 1 percentiles of the wage data were not used in the analysis.

16. Many firms still have a mandatory retirement age of sixty. However, a new law in 2012 mandated that, from April 2013, firms must continue to offer employment opportunity to their workers until age sixty-four. This, however, can be in the form of nonstandard employment. The law passed because of the rise of the standard age of receiving the employee public pension.

17. A time series of *seishain* is available from 2005. To include the time series of 2002 to 2005, the definition of workers with permanent contract, that those of *seishain* and nonstandard employees are recommended for use by the ministry. In 2005, *seishain* was 81.4 percent of all male workers, and 44.1 percent of all female workers. Permanent contract nonstandard workers were 4.7 percent for males and 15.5 percent for females in the same year. In 2017, the respective *seishain* figures by gender were 74.2 percent 43.5 percent, and permanent contract nonstandard workers by gender, 3.6 percent and 8.8 percent.

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Appendix Descriptive Statistics for Table 11.3 and Table 11.4

| | All employees, firm size over 100 | | | | *Seishain* employees firm size over 100 | | | |
	means	standard dev	min	max	means	standard dev	min	max
managers	0.222	0.416	0	1	0.253	0.435	0	1
female	0.299	0.458	0	1	0.263	0.440	0	1
Ed 14 yrs	0.148	0.355	0	1	0.146	0.353	0	1
Ed 16 yrs or more	0.362	0.481	0	1	0.388	0.487	0	1
Ed 14 yrs*female	0.083	0.275	0	1	0.077	0.266	0	1
Ed 16 yrs or more* female	0.073	0.260	0	1	0.072	0.259	0	1
Age 21–24	0.076	0.265	0	1	0.076	0.265	0	1
Age 25–29	0.131	0.338	0	1	0.133	0.340	0	1
Age 30–34	0.134	0.340	0	1	0.138	0.345	0	1
Age 35–39	0.134	0.341	0	1	0.140	0.347	0	1
Age 40–44	0.131	0.337	0	1	0.136	0.343	0	1

(*cont.*)

	All employees, firm size over 100				*Seishain* employees firm size over 100			
	means	standard dev	min	max	means	standard dev	min	max
Age 45–49	0.120	0.325	0	1	0.124	0.330	0	1
Age 50–54	0.115	0.319	0	1	0.118	0.322	0	1
Age 55–59	0.100	0.300	0	1	0.099	0.298	0	1
Age 60–64	0.041	0.197	0	1	0.018	0.133	0	1
Age 21–24* female	0.035	0.183	0	1	0.034	0.181	0	1
Age 25–29* female	0.050	0.218	0	1	0.048	0.213	0	1
Age 30–34* female	0.041	0.199	0	1	0.038	0.191	0	1
Age 35–39 * female	0.036	0.187	0	1	0.033	0.178	0	1
Age 40–44* female	0.035	0.183	0	1	0.030	0.170	0	1
Age 45–49* female	0.032	0.175	0	1	0.026	0.160	0	1
Age 50–54* female	0.029	0.168	0	1	0.024	0.153	0	1
Age 55–59* female	0.024	0.153	0	1	0.019	0.137	0	1
Age 60–64* female	0.010	0.099	0	1	0.005	0.069	0	1
tenure	13.262	11.159	0	49	14.281	11.042	0	49
tenure^2	300.39	403.31	0	2401	325.88	402.11	0	2401
tenure* female	2.825	6.640	0	49	2.785	6.777	0	49
tenure^2* female	52.06	178.74	0	2401	53.69	183.33	0	2401
year2002	0.070	0.254	0	1	0.080	0.271	0	1
year2003	0.068	0.252	0	1	0.078	0.268	0	1
year2004	0.069	0.253	0	1	0.078	0.269	0	1
year2005	0.061	0.239	0	1	0.060	0.238	0	1
year2006	0.062	0.242	0	1	0.062	0.240	0	1
year2007	0.059	0.236	0	1	0.058	0.234	0	1
year2008	0.058	0.235	0	1	0.057	0.231	0	1
year2009	0.057	0.231	0	1	0.055	0.228	0	1
year2010	0.058	0.233	0	1	0.056	0.230	0	1
year2011	0.056	0.230	0	1	0.054	0.227	0	1
year2002* female	0.018	0.132	0	1	0.020	0.140	0	1
year2003 * female	0.017	0.130	0	1	0.019	0.138	0	1
year2004* female	0.018	0.133	0	1	0.020	0.140	0	1
year200 * female	0.019	0.136	0	1	0.016	0.125	0	1
year2006* female	0.019	0.135	0	1	0.016	0.124	0	1
year2007* female	0.019	0.136	0	1	0.016	0.124	0	1
year2008* female	0.017	0.131	0	1	0.014	0.118	0	1
year2009* female	0.017	0.131	0	1	0.014	0.119	0	1
year2010* female	0.018	0.132	0	1	0.015	0.121	0	1

(*cont.*)

	All employees, firm size over 100				*Seishain* employees firm size over 100			
	means	standard dev	min	max	means	standard dev	min	max
year2011* female	0.017	0.130	0	1	0.015	0.120	0	1
year2013–2017	0.321	0.467	0	1	0.304	0.460	0	1
year 2013–2017* female	0.101	0.302	0	1	0.083	0.277	0	1
year2016–2017	0.133	0.340	0	1	0.127	0.333	0	1
year 2016–2017* female	0.044	0.204	0	1	0.037	0.188	0	1
firm5000–	0.243	0.429	0	1	0.248	0.432	0	1
firm1000–	0.245	0.430	0	1	0.246	0.431	0	1
firm500–	0.133	0.339	0	1	0.131	0.337	0	1
firm100–	0.264	0.441	0	1	0.261	0.439	0	1
firm100–* female	0.083	0.275	0	1	0.073	0.259	0	1
firm100–* female* year2013–2017	0.082	0.275	0	1	0.021	0.145	0	1
firm100–* year 2013–2017	0.082	0.275	0	1	0.078	0.268	0	1
seishain	0.862	0.345	0	1				
*seishain** female	0.227	0.419	0	1				
sample size	9,893,284				8,528,542			