

## Article

*Accounting Letters*

Volume 1, Issue 1

March 2024

pp. 47–56

Published by

The Accounting and Economic Association of Japan 2024

# Effect of the 2018 Revision to the Labor Standards Law on Firm Performance: Evidence from Japan

Tomotaka Yanagida

Tokyo University of Science

Submitted: July 1, 2023; Revised: December 6, 2023; Accepted: December 19, 2023;

Available online: February 15, 2024; Published: March 25, 2024

## Abstract

In 2018, the Labor Standards Law was revised to protect workers from excessive work, maintain their health, and accomplish work–life balance in Japan. Following this revision, Japanese firms are required to grant a paid leave of 5 working days to their employees. This study investigates the effects of this policy change, which is an exogenous shock, and finds that the average proportion of sales growth increased by nearly 5.4% due to the 2018 law revision. This suggests that firm performance improves through the enhancement of employees' physical and mental health as well as the efficiency of their work style. This study contributes to the literature by providing new evidence on firms' CSR activity. Additionally, this study presents a pilot case for foreign regulators and rule-making institutions because this policy change had a positive impact on firm performance.

The Online Appendix is available at [https://www.aea-j.org/journals\\_and\\_books/journal\\_al/](https://www.aea-j.org/journals_and_books/journal_al/).

**Keywords:** CSR; Difference in Difference Approach; Firm Performance; Japan; Work-Life Balance

---

I would like to thank Edward Lee (University of Manchester), Haiyan Zhou (University of Texas Rio Grande Valley), Alhanouf Almubarak (University of East Anglia), Jumpei Hamamura (Momoyama Gakuin University), Cheng-Erh Huang (Chengchi University) and an anonymous referee for their insightful comments. This work was supported by JSPS KAKENHI Grant Number JP23K12586.

Corresponding Author: Tomotaka Yanagida, 1-3 Kagurazaka, Shinjuku-ku, Tokyo 162-8601, Japan

© 2023 The Accounting and Economic Association of Japan.  
All rights reserved.

## 1. Introduction

According to a media report,<sup>1</sup> trials regarding working four days a week for the same pay are conducted in various countries. Those who oppose the four-day workweek say that while the policy may benefit some workers, it is not feasible for many, including workers in critical industries such as child and health care, which already face widespread staff shortages. However, the report says the four-day workweek pilot was exceedingly successful for most firms.

Japan is in the same trend. In 2018, the Labor Standards Law was revised to protect workers from excessive work, maintain their health, and accomplish work–life balance in Japan. Following this revision, Japanese firms are required to grant a paid leave of 5 working days to their employees, and violating this provision will result in punishment. A paid leave is a holiday for workers, who do not lose their salaries for a designated time every year. Paid leave allows workers to distance themselves from their jobs and refresh their minds. However, according to the Ministry of Health, Labor and Welfare, the ratio of taking paid leave was low in Japan.<sup>2</sup>

“Health management,” which is based on the idea that the improvement of employees’ health is an investment that will increase profitability in the future, is attracting attention as a strategic approach to employee health management from a managerial perspective. The Work Style Reform is one of the corporate management strategies promoted by the Ministry of Economy, Trade, and Industry (METI) to “improve corporate performance” and “optimize healthcare costs” in Japan, where the labor force population is declining, and the super-aging society is progressing.<sup>3</sup> For example, Kao Corporation, one of Japan’s leading manufacturers of daily necessities, has stated its commitment to health management as follows:

Kao is a company that wishes for “cleanliness, beauty, and health” for people around the world and contributes to the realization of an affluent lifestyle culture. We believe that health is the basis for a fulfilling business and personal life and that we can develop our business only when our employees and their families are healthy. Therefore, we issued the Health Declaration in 2008 and have been working on “health management” to promote health through the PDCA cycle since then.<sup>4</sup>

---

<sup>1</sup> The Washington Post, February 21, 2023.

<sup>2</sup> Ministry of Health, Labor and Welfare, “For Work Style Reform.” See <https://www.mhlw.go.jp/stf/seisakunitsuite/bunya/0000148322.html> (January 5, 2023)

<sup>3</sup> Ministry of Economy, Trade and Industry, “Health Management.” See [https://www.meti.go.jp/policy/mono\\_info\\_service/healthcare/kenko\\_keiei.html](https://www.meti.go.jp/policy/mono_info_service/healthcare/kenko_keiei.html) (January 5, 2023)

<sup>4</sup> Kao Corporation, “The Introduction of Health Management in Kao.” See <https://www.kao.co.jp/genki/kenkoukeiei/introduction/> (January 5, 2023)

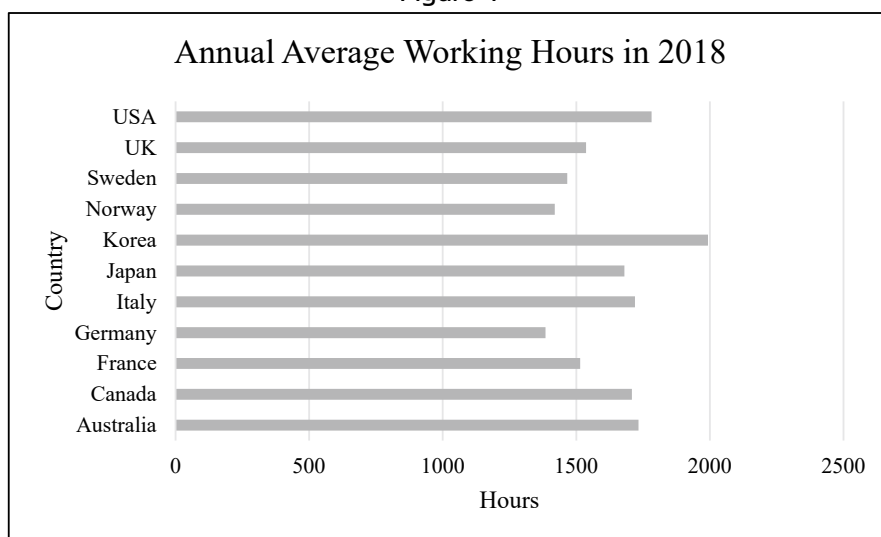
The effect of these reforms remains unclear. This 2018 revision of the labor law is an exogenous shock and provides a unique setting. I investigate the relationship between firms' CSR activities and performance using this exogenous shock to mitigate the endogeneity problem. This study contributes to the literature by showing that the revision of the law positively affected Japanese firms. The remainder of this paper is organized as follows: Section 2 outlines paid leave; Section 3 reviews the literature and presents the hypothesis; the results are presented in Section 4; Section 5 presents additional tests; finally, Section 6 presents the suggestions and conclusions.

## 2. Paid Leave

Paid leave is different from an ordinary holiday in terms of not losing salaries and being released from work for certain days. Large companies had paid leave system in place, out of kindness, before World War II; however, this custom did not take root in Japan (Nishitani, 2020). Therefore, when the Labor Standards Law enacted in 1947 established paid leave, people recognized it as a new system creation.

After World War II, Japanese workers worked so hard that they were called “economic animals,” and this was one of the reasons why the Japanese economy developed rapidly (Abegglen and Stalk, 1985). The average working hours decreased because fatal accidents caused by overwork and complementary overtime work became a social issue. However, as shown in Figure 1, Japanese working hours were relatively long in 2018,<sup>5</sup> Even though, internationally, paid leave for 3 weeks per year is set as the minimal standard by the ILO 132nd treaty.

Figure 1



<sup>5</sup> OECD, “Hours worked.” See <https://data.oecd.org/emp/hours-worked.htm> (January 5, 2023)

As mentioned above, because of labor standards law revision, Japanese firms should grant their employees paid leave for 5 working days. This Work Style Reform is aimed at building a society in which working people can choose various work styles according to their circumstances. To comprehensively promote this undertaking, measures are being taken to realize diverse and flexible work styles and ensure fair treatment regardless of employment status. For example, a ceiling on overtime work of 45 hours per month and 360 hours per year has been established.

### 3. Prior Literature and Hypothesis Development

Two theories exist on CSR and firm performance. One is stakeholder theory, where CSR influences business reputation, thereby provoking a competitive advantage, which leads to the increase of the corporate financial performance (Freeman, 1984). The other is the shareholder value theory; this view stipulates that CSR negatively affects firms' financial performance because the maximization of shareholder value is the primary responsibility of business entities toward society (Friedman, 1970). Stakeholders of CSR are employees, customers, investors, the community, the natural environment, and suppliers (Mishra and Suar, 2010). This study focuses on employees.

In general, while vacation allows workers to recover (Syrek et al., 2018), long working hours are associated with depression, anxiety, sleep problems, and coronary heart disease (Bannai and Tamakoshi, 2014). Prior literature on work–life balance and firm performance is scarce. Green et al. (2019) and Symitsi, Stamolampros and Daskalakis (2018) analyze the effect of work–life balance on firm performance using employee reviews. They find that work–life balance has a positive effect on firm performance. However, Green et al. (2019) indicate that employees might get busy, which would lead to good firm performance; however, this contradicts work–life balance. Yamamoto and Matsumoto (2014) observe a positive correlation between the attainment of work–life balance (including childcare or family care leave programs, flexible working arrangements, and the establishment of departments for promoting work–life balance practices) and total factor productivity because work–life balance practices reduce worker turnover and absenteeism and enhance recruiting effectiveness. Alesina and Sacerdote (2005) point out that a peer effect of having paid holiday with colleagues leads to improved work efficiency. For example, workers start to pay attention not only to their own holidays but also to other workers' holidays and manage the workload in a coordinated way according to the mandated vacations.

Following the labor standards law revision, Japanese firms are required to grant a paid leave of 5 working days to their employees. Specifically, for each worker, a firm must grant 5 days of paid leave within one year of the base date at the time it sets.<sup>6</sup> This revision has also contributed to employee well-being and may also result in employees working more effectively in response to the

---

<sup>6</sup> Labor Standards Law Article 39 (7)

law's reform. For example, Hedges (1971) mentions the reduction in startup and closedown time relative to operating time and the finalizing of work schedules regarding processing time for specific operations, rather than a standard workweek for the purpose of taking a long holiday. In other words, it is possible that Japanese employees worked less efficiently when not taking paid holidays prior to the law's reform. Accordingly, this argument leads to the following hypothesis:

Hypothesis: The 2018 revision of labor law has a positive impact on firm performance.

## 4. Research Design

### 4-1. Data

The sample consists of 1,552 firm-year observations for the period from April 2018 to March 2019 and April 2019 to March 2020. The sample selection procedure is summarized in Table A-1 in the Online Appendix. I collected samples of firms whose fiscal years ended in March,<sup>7</sup> and excluded financial sector firms (i.e., firms in the banking, securities, and insurance sectors). I collected financial data using *Nikkei NEEDS-CGES* and paid leave data from the *Toyokeizai Complete CSR Guide*. When firms did not have consolidated financial statements, I used unconsolidated accounting data. To rule out the impact of outliers, I used the data winsorized at the bottom 1% and top 99% levels for each variable, except for the indicator variables. Table 1 presents the variables used in this study.

Table 1

Variables	Descriptions
<i>ROA</i>	Income before extraordinary items and taxes, scaled by total assets
<i>SALESGROWTH</i>	Yearly growth rate of sales
<i>Treat</i>	Dummy variable for firms with less than 5 days used for paid holiday in average in March 2018; zero otherwise
<i>After</i>	Dummy variable for the labor law revision time period; zero otherwise
<i>lnEMPL</i>	The logarithm of total employees
<i>AVEQ</i>	The market value of equity plus total liabilities, deflated by total assets
<i>FCFASS</i>	Operating cash flows minus capital expenditures deflated by total assets
<i>NFLOAT</i>	The share held by the top 10 shareholders and officers
<i>DASS</i>	Total debt deflated by total assets
<i>SFND</i>	Current assets minus current debt, deflated by sales

<sup>7</sup> For most Japanese listed firms, the fiscal year ends in March. The 2018 labor law revision was passed in the Diet in June 2018 and implemented on April 1, 2019. However, I am concerned there is a bias in the industry because the samples were limited to those whose fiscal year ends in March. For example, for many Japanese retail companies, the fiscal year ends in February. Therefore, these samples could not be captured in this study.

To investigate the effect of the 2018 revision to the labor law on firm performance in Japanese listed firms, I applied the difference-in-differences approach by letting  $Treat_{it}$  denote a dummy variable for firms with fewer than 5 average paid holidays per year in March 2018, just prior to the law revision being applied, and letting  $After_{it}$  denote a dummy variable for the subsequent (post-policy change) time period. The treatment groups ( $Treat_{it} = 1$ ) were strongly affected by the law revision, and the control groups ( $Treat_{it} = 0$ ) were weakly affected. My identification strategy is based on the observation that the regulation forced some but not all firms to review work-life balance practices. This policy change, which is the 2018 revision to labor law, is suitable for the difference-in-differences approach because it is free from self-selection problems.

I used  $ROA_{it}$  as the measurement for firm performance because firm profitability indicates a portion of a firm's retained earnings. In addition,  $SALESGROWTH_{it}$  is regarded as the the measurement for firm performance because higher-growth firms usually attract more investor attention (Shen et al., 2022). Following studies on factors affecting firm performance (see, for example, Shen et al., 2020), I incorporated 6 determinants: business complexity ( $lnEMPL_{it}$ ,  $DASS_{it}$ , and  $SFND_{it}$ ), degree of agency problems ( $FCFASS_{it}$ ), information asymmetry in relation to the firm's business ( $AVEQ_{it}$ ) and managerial power over shareholders ( $NFLOAT_{it}$ ). In addition, I controlled for industry fixed effects. Table A-2 in the Online Appendix presents the descriptive statistics. Table 2 displays the average number of annual paid holidays taken and the proportion of firms with fewer than 5 days of leave both before and after the labor law's reform.

**Table 2**

	Average annual paid holidays taken	Ratio of firms with fewer than 5 annual paid holidays on average
Before	11.1 days	3.90%
After	12.6 days	0.40%

Table 3 presents the industry distribution of treatment and control firms. Among the treatment firms, the retail trade sector has the highest representation.

Table 3

Industry	Treatment Firms	Control Firms
Fishery, Agriculture and Forestry	0%	0%
Mining	0%	0%
Construction	13%	6%
Foods	6%	4%
Textiles and Apparels	0%	2%
Pulp and Paper	0%	1%
Chemicals	0%	11%
Pharmaceutical	0%	2%
Oil and Coal Products	0%	0%
Rubber Products	0%	1%
Glass and Ceramics Products	0%	1%
Iron and Steel	0%	2%
Nonferrous Metals	0%	2%
Metal Products	0%	3%
Machinery	3%	8%
Electric Appliances	3%	11%
Transportation Equipment	0%	6%
Precision Instruments	0%	2%
Other Products	3%	3%
Electric Power and Gas	0%	2%
Land Transportation	6%	3%
Marine Transportation	0%	0%
Air Transportation	0%	0%
Warehousing and Harbor Transportation	6%	1%
Information and Communication	3%	7%
Wholesale Trade	13%	9%
Retail Trade	31%	4%
Real Estate	0%	1%
Services	13%	6%

Table A-3 in the Online Appendix presents the Pearson/Spearman correlations between the independent variables used in the regression model.  $DASS_{it}$  is correlated with  $SFND_{it}$ . I addressed multicollinearity to check the variance inflation factor (VIF) and found it acceptable because each VIF value was no more than 10.

The following is my model:

$ROA_{it}$  or  $SALESGROWTH_{it}$

$$= \alpha_0 + \beta_1 Treat_{it} + \beta_2 After_{it} + \beta_3 Treat_{it} \times After_{it} + \sum \gamma_j Control_{jt} + \varepsilon_{it}$$

## 4-2. Results

Table 4 reports the results of the regression analyses. The reported t-value is based on robust standard errors (White, 1980). My variable of interest,  $Treat_{it} \times After_{it}$ , is not significant when the dependent variable is  $ROA_{it}$ , but it is significantly positive at the 1% level when the dependent variable is  $SALESGROWTH_{it}$ . According to the coefficient of  $Treat_{it} \times After_{it}$ , the average proportion of sales growth for the firms with less than 5 average paid holidays per year in 2018 increased by nearly 5.4% due to the 2018 law revision.

**Table 4**

Dependent Variable	ROA			SALESGROWTH		
Variable	Coef.	t-value	VIF	Coef.	t-value	VIF
<i>Constant</i>	3.726 ***	3.548		0.025	1.144	
<i>Treat</i>	-0.798	-1.244	2.072	-0.024 **	-2.140	2.072
<i>AFTER</i>	-1.175 ***	-6.656	1.049	-0.048 ***	-12.089	1.049
<i>Treat</i> × <i>AFTER</i>	-0.093	-0.097	1.980	0.054 ***	2.951	1.980
<i>lnEMPL</i>	0.298 ***	3.917	1.454	-0.003 **	-2.035	1.454
<i>AVEQ</i>	2.791 ***	9.543	1.333	0.028 ***	6.498	1.333
<i>FCFASS</i>	0.218 ***	7.575	1.157	-0.001 *	-1.786	1.157
<i>NFLOAT</i>	0.023 ***	2.826	1.336	0.000 **	2.520	1.336
<i>DASS</i>	-0.083 ***	-10.537	2.236	0.000	-0.559	2.236
<i>SFND</i>	-1.891 ***	-3.171	2.310	-0.018 *	-1.812	2.310
<i>INDUSTRY Dummy</i>		yes			yes	
AdjR2		0.472			0.183	
N		1,552			1,552	

Note: The symbols \*\*\*, \*\*, and \* indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

## 5. Additional Tests

Additional tests were conducted to evaluate the robustness of the empirical results. I used data from 2017 and 2020, in addition to the first 2018–2019 data, and conducted the two-way fixed effects model with panel data. Furthermore, some prior literature on firm performance using the difference-in-differences approach uses control variables measured immediately 1 year prior to the dependent variables (e.g., Nguyen, 2018; Altamuro and Beatty, 2010). This study followed and tried such an approach. Additionally, the revised law not only mandates 5 compulsory days of paid leave for employees, but also imposes a limit of 360 hours per year for overtime work. To address this, I let  $Treat_{it}$  denote a dummy variable for firms with fewer than 5 average paid holidays or more than 360 hours of overtime per year and re-estimate the model. Notably, these results main-



ly remain unchanged (untabulated).

In the difference-in-differences approach, it is important to consider whether the proportion of  $ROA_{it}$  and  $SALESGROWTH_{it}$  in the treatment and control group firms followed similar trends before treatment, i.e., whether the parallel trend assumption holds. For this, an event study model was conducted by plotting regression coefficients with 95% confidence intervals on the treatment leads and lags based on the work of Miller, Johnson and Wherry (2019). Figures A-1 and A-2 in the Online Appendix show the results. The pre-treatment coefficients are nearly zero in their point estimate. Undeniably, the treatment and control group firms had similar trajectories until 2019.

## 6. Conclusion

This study investigated the effect of the policy that made firms grant their employees 5 days or more paid leave using the 2018 labor law revision, which is an exogenous shock. I found that the average proportion of sales growth increased by nearly 5.4% due to the 2018 law revision, which implies that firm performance increases by enhancing employees' physical and mental health as well as the efficiency of their work style.  $ROA_{it}$  is not significant, but no evidence shows that more paid leave decreases firm performance. Future studies should investigate in which industries this phenomenon is observed, as well the financial factors associated with it.

This study contributes to the existing literature by providing new evidence on firms' CSR activity. In addition, this study is a pilot case for foreign regulators and rule-making institutions because this policy change had a positive impact on firm performance. However, this study has some limitations. Paid-leave data from the *Toyokeizai Complete CSR Guide* are based on voluntary disclosure; therefore, some firms do not disclose paid leave data. In particular, some firms may intentionally withhold their employees' work data due to unfavorable conditions. In addition, the accuracy of the data is questionable compared to financial data audited by public accountants.

### References

- Abegglen, J. C., Stalk Jr, G., 1985. *Kaisha: The Japanese Corporation*, Tokyo: Charles E. Tuttle Company.
- Alesina, A., Glaeser, E., Sacerdote, B., 2005. Work and leisure in the United States and Europe: Why so different? *NBER Macroeconomics Annual*, 20, 1-64.
- Altamuro, J., Beatty, A., 2010. How does internal control regulation affect financial reporting?. *Journal of accounting and Economics* 49(1-2), 58-74.
- Bannai, A., Tamakoshi, A., 2014. The association between long working hours and health: a systematic review of epidemiological evidence. *Scandinavian journal of work, environment & health*, 5-18.
- Freeman, R. E. 1984., *Stakeholder management: framework and philosophy*. Pitman, Mansfield, MA.
- Friedman, M. 1970., A theoretical framework for monetary analysis. *Journal of Political Economy* 78(2), 193-238.
- Green, T. C., Huang, R., Wen, Q., Zhou, D., 2019. Crowdsourced employer reviews and stock returns. *Journal of Financial Economics* 134(1), 236-251.

- Hedges, J. N. .1971. A look at the 4-day workweek. *Monthly Labor Review*, 94 (10), 33-37.
- Nguyen, J. H., 2018. Carbon risk and firm performance: Evidence from a quasi-natural experiment. *Australian Journal of Management* 43 (1), 65-90.
- Nishitani, S., 2020. Labor Law. *Nippon Hyoron Sha* (in Japanese)
- Miller, S., Johnson, N., & Wherry, L. R., 2021. Medicaid and mortality: new evidence from linked survey and administrative data. *The Quarterly Journal of Economics*, 136 (3), 1783-1829.
- Mishra, S., Suar, D., 2010. Does corporate social responsibility influence firm performance of Indian companies?. *Journal of Business Ethics* 95 (4), 571-601.
- Shen, H., Fu, M., Pan, H., Yu, Z., Chen, Y., 2020. The impact of the COVID-19 pandemic on firm performance. *Emerging Markets Finance and Trade* 56 (10), 2213-2230.
- Shen, Y., Wallace, D., Reddy, K., Ramiah, V., 2022. An investigation of CEO characteristics on firm performance. *Accounting & Finance* 62 (3), 3563-3607.
- Symitsi, E., Stamolampros, P., Daskalakis, G., 2018. Employees' online reviews and equity prices. *Economics Letters* 162, 53-55.
- Syrek, C. J., Weigelt, O., Kühnel, J., de Bloom, J., 2018. All I want for Christmas is recovery—changes in employee affective well-being before and after vacation. *Work & Stress* 32 (4), 313-333.
- White, H., 1980. A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica: Journal of the Econometric Society*, 817-838.
- Yamamoto, I., Matsuura, T., 2014. Effect of work-life balance practices on firm productivity: Evidence from Japanese firm-level panel data. *The BE Journal of Economic Analysis & Policy* 14 (4), 1677-1708.