경제학석사 학위논문

Why did the 52-hour Workweek policy fail to reduce working hours?

왜 주 52시간 근로제는 근로시간을 줄이지 못했는가?

2022 년 8 월

서울대학교 대학원

경제학부 경제학전공

손 원 근

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이 논문을 경제학석사 학위논문으로 제출함

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손원근의 경제학석사 학위논문을 인준함

2022 년 6 월

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Abstract

This paper investigates the evolution of the working-hour distribution caused by the South Korean 52-hour workweek policy by taking a difference-in-differences approach. The policy was initiated in 2018 in South Korea to lower the statutory limit on the maximum workweek from 68 to 52 hours, in which the upper limit was gradually reduced by industry and firm size. As theoretical models predict, the empirical results show that there is no statistically significant evidence that regulation has led to a successful decrease in overall working hours. Instead, the regulation has significantly decreased the probability of working more than 52 hours a week by about 0.9% point and increased the probability of working between 41 and 52 hours a week by about 1.2% point. This implies that to abide by the regulation firms have reallocated the distribution of working hours, rather than reducing employees' working hours, on average.

Keyword : 52-hour Workweek policy, Maximum workweek reduction, Overtime, Working-hour reallocation, Difference-in-differences method
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I. Introduction

Excessive working hours are to blame for adverse conditions for employees. A long workweek is known to accumulate greater fatigue and stress and to deprive workers of time to recover their physical and psychological capacities. In turn, these negative phenomena damage workers' health (Bratberg et al. 2008; Sánchez 2017; Berniell and Bietenbeck 2017; Cygan-Rehm and Wunder 2018), threaten their well-being (Lepinteur 2019), and reduce labor productivity (Pencavel 2015; Dolton et al. 2016; Collowet and Sauermann 2017; Lu and Lu 2017). In addition, long-hour workers have negative spillover effects on their surroundings by increasing their peers' working hours (Collewet et al. 2017) and further preventing the curtailment of carbon emissions (Cieplinski et al. 2021). Thus, South Korea has shortened the maximum upper limit of working hours per week from 68 to 52 by implementing a reform called the 52-hour Workweek policy to eradicate excessive overtime and improve working conditions. The 52-hour limit was applied to large firms with 300 or more employees as of July 2018 and then progressively expanded to small firms with fewer than 300 employees as of January 2022.

Many studies have explored the effect of a decrease in standard working hours. Seminally, Hunt (1999) finds that a legislative reduction in the standard workweek has lowered actual working hours in Germany. Contrary to the German unions' attempt to raise employment by reducing standard working hours, it is demonstrated that this reduction has led to a rise in hourly wage rates, a surge in labor costs, and, subsequently, a decline in employment. Similarly, most studies have found no evidence that reducing the standard hours promotes work-sharing and encourages employment. (see Crépon and Kramarz 2002; Skuterud 2007; Kawaguchi et al. 2008; Sánchez 2013).

However, only a few studies have been conducted on the effects of a reduction in total working hours, which is the sum of standard and overtime hours. Although paying no attention to shifts in working hours, Shim and Kim (2020) contend that the 52-hour workweek policy has motivated companies listed on Korea Composite Stock Price Index (KOSPI) and Korea Securities Dealers Automated Quotation (KOSDAQ) to hire more employees. Thewissen et al. (forthcoming) and Kim (2021) point out that the 52-hour Workweek policy has led to no decline in overall working hours. Additionally, the phenomenon has been found that a decrease in the ratio of those who work more than 52 hours and an increase in the ratio of those who work between 41 and 52 hours occur because of the policy (Thewissen et al., forthcoming).

This research contributes to the literature on working-hour reduction. First, this paper investigates how the workhour distribution has been reallocated by the limit on total working hours. The studies above have shed little light on why the 52-hour limit failed to decrease overall working hours. Second, empirical evidence is discovered that the regulation heterogeneously binds firms according to their initial optimal working hours. This is consistent with a theoretical prediction from partial-equilibrium models. Third, more detailed information contained in the data allows a keener assessment of how effective the 52-hour limit is. Given that substantially long working hours are likely to lead to accidents in the workplace (Lee and Lee 2012), harmful health behaviors (Ahn 2016), poor labor productivity (Park and Park 2019), and low well-being (Hamermesh et al. 2017) in South Korea, the evaluation provided by this paper is crucial for the South Korean government as well as other governments that might refer to the case of South Korea.

The remainder of this paper is organized as follows. Section II presents the institutional background of the 52-hour Workweek policy and discusses the theoretical background of the impacts the policy would have on working hours. Section III describes the data used in the analysis. Section IV specifies the econometric strategy and Section V provides the estimation results. Finally, Section VI concludes the paper.

II. Background

II.1. Institutional Background

For decades, the South Korean government has combated a widespread tendency toward substantially long working hours. This is because the country has been infamous for its excessive overtime since joining the Organization for Economic Cooperation and Development (OECD). The OECD Employment and Labor Market Statistics indicate that South Korea has ranked high in yearly working hours per employee since 2008. In 1953, the Labor Standard Act (LSA) stipulated for the first time that the standard workweek was 48 hours. Through gradual revisions of the LSA, the standard working hours were reduced to 46 in 1989, 44 in 1991, and 40 in 2003. Since 2003, the South Korean government has officially interpreted the statutory maximum workweek as 68 hours, which is decomposed to the standard 40 hours, 12 hours of overtime, and 16 hours of weekend work. However, the courts have passed several judgments that contradict the government's interpretation, ruling that weekend hours are not permitted and that the legislative maximum is 52 hours. This discrepancy has demanded for years that the National Assembly reform the LSA.

The LSA (No. 11270) enacted in March 2018 includes three major amendments that restrict the maximum number of working hours from 68 to

52 a week. First, “one week” is defined as seven days, including Saturday and Sunday, in Article 2. Before the new law, 16 hours of overtime were implicitly allowed on the weekend, as Saturday and Sunday were not considered by the government to be included in “one week.” However, the maximum number of overtime hours per week explicitly becomes 12 hours in the new law. Second, 21 of 26 industries are excluded from exemption by Article 59. Table 1 shows which industries remain exempt and which industries do not. Third, the 52-hour limit is gradually implemented, depending on industry and firm size by Addenda Article 1. The government has announced different schedules according to industry and firm size for a soft transition into the new law. The time-varying limits on working hours by industry and firm size are summarized in Table 2. Consequently, the amendments indicate that firms have experienced exogenous variations in the statutory limits on working hours over time.

Table 1. Industry Classifications Exemption-Included and Exemption-Excluded

Exemption	Industry [Korean Standard Industrial Classification 10]
Included	1) Land transport and transport via pipelines [49]* 2) Water transport [50] 3) Air transport [51] 4) Support activities for transportation [529] 5) Human health activities [86]
Excluded	1) Sale of motor vehicles and parts [45] 2) Wholesale trade on own account or on a fee or contract basis [46] 3) Retail trade [47] 4) Warehousing and storage [521] 5) Financial service activities [64] 6) Insurance and pension funding [65] 7) Activities auxiliary to financial service and insurance activities [66] 8) Postal activities [611] 9) Education [85] 10) Research and development [70] 11) Accommodation [55] 12) Food and beverage service activities [56] 13) Advertising [713] 14) Market research and public opinion polling [714] 15) Cleaning and pest control services of building and industrial facilities [742] 16) Personal care services [961] 17) Motion picture, video and television programme production, sound recording and music publishing activities [59] 18) Broadcasting activities [60] 19) Telecommunications [612] 20) Sewage, wastewater, human and animal waste treatment

	services [37] 21) Social work activities [87] *Intracity bus transport [49212], *Intercity bus transport [4922]

Intracity bus transport and intercity bus transport out of land transport and transport via pipelines are partially excluded from the exemption. The 10th Korea Standard Industrial Classification (KSIC 10) codes are in brackets.

Table 2. Statutory Limits on Working Hours Across Firms Over Time

Firm	2018H1	2018H2	2019H1	2019H2	2020H1
Exemption-included	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
Fewer than 300 employees	68	68	68	68	68
Exemption-excluded, fewer than 300 employees	Unlimited	68	68	68	68
Exemption-excluded, 300 or more employees	Unlimited	68	68	52	52
300 or more employees	68	52	52	52	52

II.2. Theoretical Background

This section discusses a simple labor demand model to theoretically predict the effects of the regulation on actual working hours. The model is in line with Hunt (1999), Kawaguchi et al. (2008), and Kim and Lee (2012). For simplicity, it is assumed that a firm produces its output by using only labor as an input and that the firm's production function is non-decreasing, strictly concave, and differentiable. A firm minimizes its production costs by choosing working hours per worker h and employment n, given the standard working hours h_0, the maximum working hours $\check{h}$, the weekly wage W, the overtime premium α and the fixed cost of employment F. In other words, the cost function of which the firm solves the minimization problem is given by

$$C(h,n) = \left(\frac{W}{h_0} min\{h, \check{h}\} + F + \alpha \frac{W}{h_0} min\{max\{0, h - h_0\}, \check{h} - h_0\}\right) n$$

$$s.t.\ Q = q(h,n).$$

In this model, comparative static analyses concerning the maximum working hours $\breve{h}$ reveal the effects of the reduction in total working hours. There are three possible cases to consider: Case 1, where the optimal number of working hours is higher than the maximum workweek, $\breve{h} < h$; Case 2 where the optimal number of working hours is between the standard working hours and the maximum number of working hours, $h_0 < h < \breve{h};$ and Case 3, where the optimal number of working hours is lower than the standard working hours, $h < h_0$. To conclude, the analyses suggest that the regulation would affect working hours if, and only if, the optimal number of working hours of a firm were greater than the maximum workweek.

To begin, in the labor market equilibrium of Case 1, the firm chooses the labor inputs satisfying the following first-order conditions to minimize its cost function, where the Lagrange multiplier is denoted by λ. It is noteworthy that the minimization problem has a suboptimal corner solution for working hours, as the regulation distorts the labor market:

$$h^* = \breve{h}$$

$$\frac{W}{h_0}\breve{h} + F + \alpha\frac{W}{h_0}\left(\breve{h} - h_0\right) - \lambda q_n = 0$$

$$Q - q\left(\breve{h}, n^*\right) = 0.$$

Thus, the following equations are derived from first-order conditions:

$$\frac{dh^*}{d\breve{h}} = 1 \text{ and } \frac{dn^*}{d\breve{h}} = \frac{(1+\alpha)\frac{W}{h_0} - \lambda q_{nh}}{\lambda q_{nn}}.$$

These equations mean that the actual working hours decrease in direct proportion to the maximum workweek reduction, while the change in employment remains ambiguous. To be specific, the effect on employment depends on the cross productivity of working hours and employment q_{nh}. If the number of working hours is complementary to employment and positively affects employment productivity, the firm will terminate employees.

However, in the labor market equilibria of Cases 2 and 3, it turns out that a decrease in the maximum workweek would not have an effect on the actual working hours or employment. This is because the firm's optimal work hours are below the new upper bound. Obviously, firms that are not bound by the regulation are not expected to decrease working hours, other things being equal.

Next, allowing the firm to choose two types of workers provides insight into how the firm would reallocate the distribution of working hours, where long-type workers are denoted by L and short-type workers by S. Long-type workers work long hours in the labor market, and short-type workers work a short number of hours. In this sense, long-type working hours should be greater than short-type working hours. Now, the firm solves the minimization problem given by

$$
\begin{aligned}
\mathrm{C}(h_L, n_L, h_S, n_S) = \Bigg(&\frac{W_L}{h_0} min\{h_L, \check{h}\} + F \\
&+ \alpha \frac{W_L}{h_0} min\{max\{0, h_L - h_0\}, \check{h} - h_0\}\Bigg) n_L \\
&+ \left(\frac{W_S}{h_0} min\{h_S, \check{h}\} + F + \alpha \frac{W_S}{h_0} min\{max\{0, h_S - h_0\}, \check{h} - h_0\}\right) n_S
\end{aligned}
$$

$$s.t.\ Q = q(h_L, n_L, h_S, n_S).$$

Similarly, comparative static analyses with respect to the maximum limit show how the reduction in total working hours affects the labor market. Although six possible cases can be considered in this model, it is sufficient to look into the case where $h_S < h_0 < \check{h} < h_L$ as a baseline. The analyses provide a plausible scenario in which long-type working hours decrease:

$$\frac{dh_L^*}{d\check{h}} = 1$$

$$
\begin{aligned}
\frac{dh_S^*}{d\check{h}} = \frac{1}{|J|}\Bigg\{&-\lambda^3 q_{n_L n_L} q_{n_S n_S} q_{h_S h_L} + \lambda^3 q_{n_L n_L} q_{n_S h_L} q_{n_S h_S} - \lambda^2 \frac{W_S}{h_0} q_{n_L n_L} q_{n_S h_L} \\
&+ \lambda^3 q_{n_L n_S}^2 q_{h_S h_L} - \lambda^3 q_{n_L n_S} q_{n_S h_L} q_{n_L h_S} \\
&+ \lambda^2 (1+\alpha) \frac{W_L}{h_0} q_{n_S n_L} q_{n_S h_S} - \lambda (1+\alpha) \frac{W_L}{h_0} \frac{W_S}{h_0} q_{n_S n_L} \\
&- \lambda^2 (1+\alpha) \frac{W_L}{h_0} q_{n_S n_S} q_{n_L h_S} - \lambda^3 q_{n_L h_L} q_{n_S n_L} q_{n_S h_S} \\
&+ \lambda^2 \frac{W_S}{h_0} q_{n_L h_L} q_{n_S n_L} + \lambda^3 q_{n_L h_L} q_{n_S n_S} q_{n_L h_S}\Bigg\}
\end{aligned}
$$

$$
\begin{aligned}
\frac{dn_L^*}{d\check{h}} = \frac{1}{|\mathrm{J}|}\Bigg\{ & \lambda^2(1+\alpha)\frac{W_L}{h_0}q_{n_S n_S}q_{h_S h_S} - \lambda^2(1+\alpha)\frac{W_L}{h_0}q_{n_S h_S}^2 \\
& + 2\lambda(1+\alpha)\frac{W_L}{h_0}\frac{W_S}{h_0}q_{n_S h_S} - (1+\alpha)\frac{W_L}{h_0}\frac{W_S^2}{h_0^2} \\
& - \lambda^3 q_{n_L h_L}q_{n_S n_S}q_{h_S h_S} + \lambda^3 q_{n_L h_L}q_{n_S h_S}^2 - 2\lambda^2 q_{n_L h_L}q_{n_S h_S}\frac{W_S}{h_0} \\
& + \lambda\frac{W_S^2}{h_0^2}q_{n_L h_L} + \lambda^3 q_{n_L n_S}q_{n_S h_L}q_{h_S h_S} - \lambda^3 q_{n_L n_S}q_{n_S h_S}q_{h_S h_L} \\
& + \lambda^2\frac{W_S}{h_0}q_{n_L n_S}q_{h_S h_L} - \lambda^3 q_{n_L h_S}q_{n_S h_L}q_{h_S n_S} + \lambda^2\frac{W_S}{h_0}q_{n_L h_S}q_{n_S h_L} \\
& + \lambda^3 q_{n_L h_S}q_{n_S n_S}q_{h_S h_L}\Bigg\}
\end{aligned}
$$

$$
\begin{aligned}
\frac{dn_S^*}{d\check{h}} = \frac{1}{|\mathrm{J}|}\Bigg\{ & -\lambda^3 q_{n_L n_L}q_{n_S h_L}q_{h_S h_S} + \lambda^3 q_{n_L n_L}q_{n_S h_S}q_{h_S h_L} - \lambda^2\frac{W_S}{h_0}q_{n_L n_L}q_{h_S h_L} \\
& - \lambda^2(1+\alpha)\frac{W_L}{h_0}q_{n_S n_L}q_{h_S h_S} + \lambda^2(1+\alpha)\frac{W_L}{h_0}q_{n_S h_S}q_{h_S n_L} \\
& - \lambda(1+\alpha)\frac{W_L}{h_0}\frac{W_S}{h_0}q_{h_S n_L} + \lambda^3 q_{n_L h_L}q_{n_S n_L}q_{h_S h_S} \\
& - \lambda^3 q_{n_L h_L}q_{n_S h_S}q_{h_S n_L} + \lambda^2\frac{W_S}{h_0}q_{n_L h_L}q_{h_S n_L} - \lambda^3 q_{n_L h_S}q_{n_S n_L}q_{h_S h_L} \\
& + \lambda^3 q_{n_L h_S}q_{n_S h_L}q_{h_S n_L}\Bigg\}
\end{aligned}
$$

$$
\begin{aligned}
where\ |\mathrm{J}| = {} & \lambda q_{n_L n_L}\left(\lambda^2 q_{n_S n_S}q_{h_S h_S} - \lambda^2 q_{n_S h_S}^2 + 2\lambda\frac{W_S}{h_0}q_{n_S h_S} - \frac{W_S^2}{h_0^2}\right) \\
& - \lambda q_{n_L n_S}\left(\lambda^2 q_{n_S n_L}q_{h_S h_S} - \lambda^2 q_{n_S h_S}q_{h_S n_L} + \lambda\frac{W_S}{h_0}q_{h_S n_L}\right) \\
& + \lambda q_{n_L h_S}\left(\lambda^2 q_{n_S n_L}q_{h_S n_S} - \lambda\frac{W_S}{h_0}q_{n_S n_L} - \lambda^2 q_{n_S n_S}q_{h_S n_L}\right).
\end{aligned}
$$

The sign of the effect on short-type working hours remains ambiguous, while a reduction in the maximum working hours clearly leads to a decrease in long-type working hours. Nevertheless, the cross partial derivative of short-type working hours and long-type working hours, $q_{h_S h_L}$, could mainly determine the sign of the effect on short-type working hours. For example, assuming $|\mathrm{J}| > 0$, $q_{h_S h_L} < 0$, and the value of $q_{h_S h_L}$ dominates those of the other factors for simplification, then $\frac{dh_S^*}{d\check{h}} < 0$. This means that if long-type working hours reduced by a decrease in the maximum working hours are substitutable with short-type working hours and improve the productivity of short-type working hours, the firm would increase short-type working hours to deal with a reduction in long-type working hours.

III. Data

This paper uses a consecutive cross-sectional dataset collected from the Local Area Labor Force Survey (LALFS), which is conducted with randomly selected households semiannually in April and October since 2013 by Statistics Korea. The LALFS contains information on actual working hours, three-digit industry codes, and firm-size codes. Specifically, firm size is categorized into six intervals: 1–4, 5–9, 10–29, 30–99, 100–299, and 300 or more employees. The dataset ranges from the second half of 2014 to the first half of 2020, consisting of only wage workers. This is because the LSA does not regulate self-employed workers.

The descriptive characteristics, such as working hours, gender, age, and years of education, of employees in the control group and the treatment group before the maximum workweek reduction, are summarized in Table 3. The observable statistics of employees in each group are comparable, but exhibit heterogeneity for some variables. Employees in the treatment group work for about 42.5 hours a week, which is longer by about 1 hour than those in the control group. However, the average over-52-hour ratio of the treatment group is lower by about 3.8%, and the average between-41-and-52-hour ratio is higher by about 1.5%, respectively, than those of the control group. Moreover, those who are male, young, and highly educated are more likely to work for large firms most of which are known to provide better job quality and conditions.

Table 3. Characteristics of Wage Workers Before the Regulation

VARIABLES	(1) Control	(2) Treatment
Working hours	41.681	42.506
	(12.804)	(10.389)
Over-52-hour	0.140	0.102
	(0.347)	(0.303)
Over-40-hour	0.425	0.402
	(0.494)	(0.490)
Over-68-hour	0.027	0.015
	(0.162)	(0.121)
Between-41-and-52-hour	0.285	0.300
	(0.451)	(0.458)
Between-53-and-68-hour	0.113	0.087

	(0.317)	(0.282)
Female	0.459	0.264
	(0.498)	(0.441)
Age in years	43.110	40.485
	(13.450)	(10.580)
Age 15–34 years	0.303	0.329
	(0.459)	(0.470)
Age 35–54 years	0.485	0.563
	(0.500)	(0.496)
Age 55+ years	0.213	0.108
	(0.409)	(0.310)
Years of education	13.142	15.100
	(3.194)	(2.885)
College degree	0.466	0.724
	(0.499)	(0.447)
Observations	993,549	113,731

This table pools administrative data from the Local Area Labor Force Survey between the second half of 2014 and the first half of 2018. The sample consists of 1,107,280 wage workers. Standard deviations are shown in parentheses. These estimates are calculated by multiplying individual weights.

The change in the distributions of the average working hours of the treated firms is depicted in Figure 1. The graph becomes sharper at the peak and moves to the left after the 52-hour workweek policy is implemented. On average, the proportion of excessive overtime decreases, while that of modest overtime increases. This indicates that there has been a reallocation of working hours in firms.

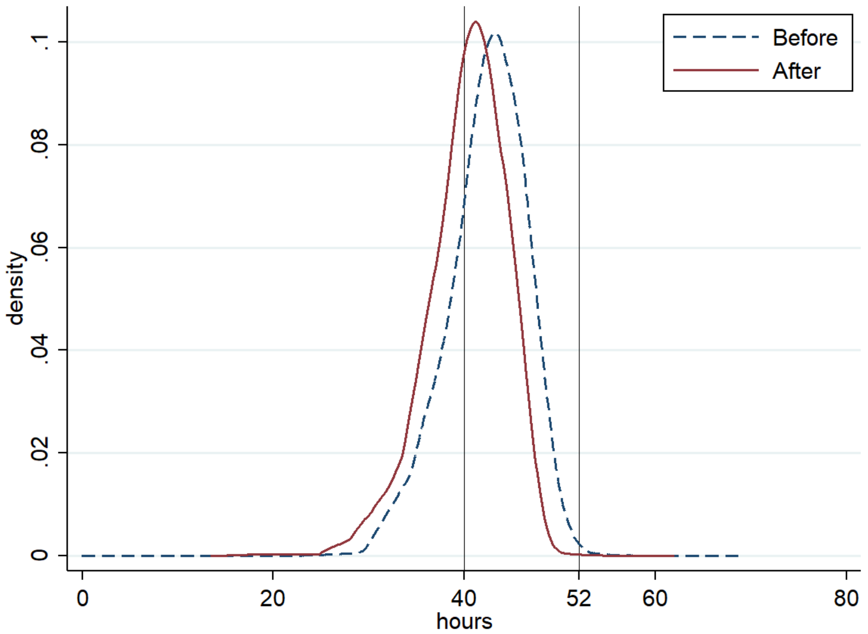


Figure 1. Distributional Transition in Average Working Hours of Treated Firms
This figure presents how the distribution of working hours in the treatment group changes after the regulation by using the Epanechnikov kernel function. The sample consists of 2,148 industry cells aggregating individual data from the Local Area Labor Force Survey between the second half of 2014 and the first half of 2020. The estimates are calculated by multiplying individual weights.

IV. Econometric Strategy

The stepwise implementation of the law across industries and firm sizes allows for a difference-in-differences approach. The treatment group is defined as individuals who work for non-exempt firms with 300 or more employees. However, the control group is categorized as individuals who work for exempt firms or with fewer than 300 employees. Thus, estimating the following equation characterizes the causal effects of the regulation:

$$h_{jist} = \delta tr52_{ist} + \mu_{is} + \mu_{it} + \mu_{st} + \epsilon_{jist}$$

where the subscripts j, i, s, and t represent individual, industry, firm size, and time, respectively. The dependent variable h represents work-hour outcomes, including the log working hours, $lnhours$, the indicator for working more than 52 hours a week, $over52$, and the indicator for working between 41 and 52 hours a week, $bt4152$. $tr52$ is the treatment variable, which equals 1 if the new law is adopted by industry i and firm size s at time t and 0 otherwise. Thus, δ captures the causal effects of the 52-hour

Workweek policy on the work-hour outcome variables. The hypothesis that the regulation has decreased long working hours suggests that $\delta < 0$ for the log working hours, $lnhours$, and the incidence of working more than 52 hours, $over52$. Furthermore, this identification model contains industry-time and size-time fixed effects, rather than time fixed effects, to control unobservable trends specific to industry and firm size. For example, time fixed effects capture macroeconomic shocks common to the whole economy, whereas industry-time fixed effects show industry-specific shocks, such as a technological change.

A more sophisticated identification is derived from the variations in the initial working hours across industries and firm sizes, as in Kawaguchi et al. (2008) and Kim and Lee (2012). The theoretical models constructed in Section II.2 predict that the maximum workweek reduction will be effective only for firms whose optimal working hours are initially above the new statutory limit. Ideally, testing this prediction at the individual level requires a panel data structure. Instead, this paper exploits the average ratios of the over-52-hour workers of each industry-size cell during the initial period from the second half of 2014 to the second half of 2016, as the individuals are not identified over time in the dataset. This strategy is based on the underlying assumption that the initial ratios are predetermined and exogenous.

$$h_{jist} = \delta_1 tr52_{jist} + \delta_2 tr52 \times over52_{0_{ist}} + \nu_{is} + \nu_{it} + \nu_{st} + \eta_{jist}$$

$over52_0$ measures the magnitude of the bindingness of the 52-hour Workweek policy on industry i and firm size s. Therefore, δ_2 captures the causal effects on the work-hour outcome variables of policy bindingness. For example, the more strongly bound a firm is by the 52-hour limit, the larger the absolute value of δ_2 becomes. The theoretical model implies that $\delta_2 < 0$ for the log working hours, $lnhours$, and the incidence of working more than 52 hours, $over52$. This estimation model also includes industry-time and size-time fixed effects.

V. Result

V.1. Average Effect

Table 4 reports the estimation results for the log working hours, $lnhours$. To check whether the estimates are stable, regardless of the specifications, the interactions of the dummy variables are included. In other words, industry-time fixed effects and size-time fixed effects are added.

Although slightly different across specifications, the estimates are qualitatively similar. It is shown that the 52-hour Workweek policy has not decreased the number of working hours. In Column (5), although statistically insignificant, working hours increase by 0.7% rather than decrease. This observational phenomenon that the regulation brings about no decrease in working hours requires a more thorough investigation. The results for the specifications, including the interaction term of the policy indicator and the initial ratio of the over-52-hour employees, are displayed as well. As the theoretical models predict in Section II.2, it is demonstrated that the 52-hour limit has decreased working hours when firms have high initial ratios of workers bound by the new limit. For example, the regulation has shortened actual working hours by 0.73% in the treated firms, whose initial ratio is higher by 10% points than the average, as reported in Column (6).

Table 4. Effects on Working Hours

VARIABLES	(1) lnhours	(2) lnhours	(3) lnhours	(4) lnhours	(5) lnhours	(6) lnhours
$tr52$	0.014***	0.010***	0.006	0.002	0.007	0.004
	(0.005)	(0.004)	(0.003)	(0.002)	(0.008)	(0.007)
$tr52 \times over52_0$		-0.081		-0.081		-0.073*
		(0.049)		(0.050)		(0.043)
Observations	958,720	958,599	958,720	958,599	958,720	958,599
R-squared	0.258	0.258	0.262	0.262	0.262	0.262
Time	YES	YES	YES	YES	YES	YES
Industry-Size	YES	YES	YES	YES	YES	YES
Industry-Time	NO	NO	YES	YES	YES	YES
Size-Time	NO	NO	NO	NO	YES	YES

*** p<0.01, ** p<0.05, * p<0.1

This table presents the effects of the maximum workweek reduction on log working hours. The sample is restricted to the period between the first half of 2017 and the first half of 2020. To calculate the initial working hours of each industry-size cell, the data for the period from the second half of 2014 to the second half of 2016 are used. Missing observations left the bindingness undefined for some cells. Columns (1)–(6) report the results from different specifications, including fixed effects. Robust standard errors, which are obtained by clustering error terms at the industry-size cell level, as suggested in Bertrand et al. (2004), are shown in parentheses.

Next, Table 5 reports the estimation results for the probability of working more than 52 hours. In the table, $over52$ is an indicator of whether the number of working hours exceeds 52. The estimates are stable across specifications. Column (5) says that the regulation has decreased the probability of working more than 52 hours by 0.9% point. This means that firms have reduced the over-52-hour ratio to abide by the 52-hour limit. Column (6) shows that the higher the degree of policy bindingness, the larger the negative impacts of the policy become. For instance, the regulation has decreased the probability of working more than 52 hours by 1.84% point in the treated firms, whose initial ratio is 10% points higher than the average.

Table 5. Effects on the Probability of Working More Than 52 Hours

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	over52	over52	over52	over52	over52	over52
$tr52$	-0.003	-0.024***	-0.011***	-0.018***	-0.009**	-0.016***
	(0.010)	(0.005)	(0.003)	(0.003)	(0.005)	(0.005)
$tr52 \times over52_0$		-0.497***		-0.184***		-0.184***
		(0.057)		(0.036)		(0.035)
Observations	974,788	974,663	974,788	974,663	974,788	974,663
R-squared	0.066	0.066	0.071	0.071	0.071	0.071
Time	YES	YES	YES	YES	YES	YES
Industry-Size	YES	YES	YES	YES	YES	YES
Industry-Time	NO	NO	YES	YES	YES	YES
Size-Time	NO	NO	NO	NO	YES	YES

*** p<0.01, ** p<0.05, * p<0.1

This table presents the effects of the maximum workweek reduction on the probability of working over 52 hours. The sample is restricted to the period between the first half of 2017 and the first half of 2020. To calculate the initial working hours of each industry-size cell, the data for the period from the second half of 2014 to the second half of 2016 are used. Missing observations left the bindingness undefined for some cells. Columns (1)–(6) report the results from different specifications, including fixed effects. Robust standard errors, which are obtained by clustering error terms at the industry-size cell level, as suggested in Bertrand et al. (2004), are shown in parentheses.

Finally, the results for the probability of working between 41 and 52 hours are summarized in Table 6. The sum of the effects on the probability of working no more than 40 hours, that of working between 41 and 52 hours, and that of working more than 52 hours should be equal to 0. In the table, $bt4152$ is a dummy variable that equals 1 if the working hours are from 41 to 52 and 0 otherwise. It is indicated in Column (5) that even if statistically insignificant, the probability of working between 41 and 52 hours has risen by 1.2% point, which is slightly larger than the estimate for $over52$ of Column (5) in Table 5. This implies that firms have reallocated the distribution of working hours, reducing the proportion of those who work more than 52 hours. Column (6) demonstrates that the probability of working between 41 and 52 hours has risen by 2.72% point in the treated firms, whose initial ratio is above the average by 10% points.

Table 6. Effects on the Probability of Working Between 41 and 52 Hours

VARIABLES	(1) bt4152	(2) bt4152	(3) bt4152	(4) bt4152	(5) bt4152	(6) bt4152
$tr52$	0.013***	0.020***	0.016***	0.026***	0.012	0.023***
	(0.005)	(0.006)	(0.006)	(0.006)	(0.008)	(0.007)
$tr52 \times over52_0$		0.165**		0.265***		0.272***
		(0.078)		(0.063)		(0.064)
Observations	974,788	974,663	974,663	974,788	974,788	974,663
R-squared	0.066	0.071	0.066	0.071	0.071	0.071
Time	YES	YES	YES	YES	YES	YES
Industry-Size	YES	YES	YES	YES	YES	YES
Industry-Time	NO	NO	YES	YES	YES	YES
Size-Time	NO	NO	NO	NO	YES	YES

*** p<0.01, ** p<0.05, * p<0.1

This table presents the effects of the maximum workweek reduction on the probability of working between 41 and 52 hours. The sample is restricted to the period between the first half of 2017 and the first half of 2020. To calculate the initial working hours of each industry-size cell, the data for the period from the second half of 2014 to the second half of 2016 are used. Missing observations left the bindingness undefined for some cells. Columns (1)–(6) report the results from different specifications, including fixed effects. Robust standard errors, which are obtained by clustering error terms at the industry-size cell level, as suggested in Bertrand et al. (2004), are shown in parentheses.

V.2. Subsample Analysis

Dividing the sample by demographic characteristics reveals quantitative heterogeneity between groups, although the estimates remain qualitatively stable across subsamples. Table 7 summarizes the effects on work-hour outcomes by gender. It is shown in columns (4) and (6) that women have experienced a sharper decline in the probability of working more than 52 hours than men, while the effects on the probability of working between 41 and 52 hours are parallel. Moreover, the imbalance between the effect on the probability of working more than 52 hours and that of the probability of working between 41 and 52 hours is larger for men than for women.

Table 7. Effects on Work-hour Outcomes by Gender

VARIABLES	(1) lnhours	(2) lnhours	(3) over52	(4) over52	(5) bt4152	(6) bt4152
A-1. MALE						

	(1)	(2)	(3)	(4)	(5)	(6)
$tr52$	0.002	-0.000	-0.006	-0.011*	0.013	0.021**
	(0.008)	(0.008)	(0.006)	(0.006)	(0.008)	(0.008)
$tr52 \times over52_0$		-0.063*		-0.113**		0.227***
		(0.035)		(0.048)		(0.070)
Observations	525,181	525,108	529,808	529,735	529,808	529,735
R-squared	0.230	0.230	0.076	0.076	0.046	0.046
A-2. FEMALE						
$tr52$	0.010	0.005	-0.008	-0.024***	0.006	0.020*
	(0.010)	(0.009)	(0.006)	(0.006)	(0.010)	(0.012)
$tr52 \times over52_0$		-0.093		-0.313***		0.277**
		(0.090)		(0.063)		(0.111)
Observations	433,539	433,491	444,980	444,928	444,980	444,928
R-squared	0.267	0.267	0.080	0.080	0.068	0.068
Time	YES	YES	YES	YES	YES	YES
Industry-Size	YES	YES	YES	YES	YES	YES
Industry-Time	YES	YES	YES	YES	YES	YES
Size-Time	YES	YES	YES	YES	YES	YES

*** p<0.01, ** p<0.05, * p<0.1

This table presents the effects of the maximum workweek reduction on the workhour outcomes by gender. The sample is restricted to the period between the first half of 2017 and the first half of 2020. To calculate the initial working hours of each industry-size cell, the data for the period from the second half of 2014 to the second half of 2016 are used. Missing observations left the bindingness undefined for some cells. Columns (1)–(6) report the results from different specifications, including fixed effects. Robust standard errors, which are obtained by clustering error terms at the industry-size cell level, as suggested in Bertrand et al. (2004), are shown in parentheses.

Table 8 illuminates the differences in the effects on the work-hour outcomes between the high educated and the low educated. Education levels are determined by college degrees. The results indicate that there are some analogies to general employees for the high educated. Low-educated workers bound by the law, to a high extent, show more responsiveness than high-educated workers. Interestingly, the increases in the probability of low-educated workers working between 41 and 52 hours do not make up for the decreases in their probability of working more than 52 hours, although statistically insignificant. This means that the policy has not encouraged a distributional reallocation for the low educated.

Table 8. Effects on Work-hour Outcomes by Education

	(1)	(2)	(3)	(4)	(5)	(6)

VARIABLES	lnhours	lnhours	over52	over52	bt4152	bt4152
B-1. HIGH						
$tr52$	0.004	0.001	-0.004	-0.010**	0.009	0.016**
	(0.004)	(0.004)	(0.004)	(0.004)	(0.007)	(0.008)
$tr52 \times over52_0$		-0.054		-0.138***		0.169**
		(0.043)		(0.042)		(0.071)
Observations	443,264	443,194	450,636	450,562	450,636	450,562
R-squared	0.129	0.129	0.056	0.056	0.049	0.049
B-2. LOW						
$tr52$	-0.005	-0.007	-0.008	-0.015*	0.000	0.012
	(0.013)	(0.012)	(0.008)	(0.008)	(0.018)	(0.015)
$tr52 \times over52_0$		-0.068		-0.230***		0.360***
		(0.058)		(0.065)		(0.102)
Observations	515,456	515,405	524,152	524,101	524,152	524,101
R-squared	0.363	0.363	0.080	0.080	0.074	0.074
Time	YES	YES	YES	YES	YES	YES
Industry-Size	YES	YES	YES	YES	YES	YES
Industry-Time	YES	YES	YES	YES	YES	YES
Size-Time	YES	YES	YES	YES	YES	YES

*** p<0.01, ** p<0.05, * p<0.1

This table presents the effects of the maximum workweek reduction on the workhour outcomes by education. The sample is restricted to the period between the first half of 2017 and the first half of 2020. To calculate the initial working hours of each industry-size cell, the data for the period from the second half of 2014 to the second half of 2016 are used. Missing observations left the bindingness undefined for some cells. Columns (1)–(6) report the results from different specifications, including fixed effects. Robust standard errors, which are obtained by clustering error terms at the industry-size cell level, as suggested in Bertrand et al. (2004), are shown in parentheses.

The impacts of the regulation on work-hour outcomes by industry are reported in Table 9. In the manufacturing sector, the between-41-and-52-hour ratio has increased due to the policy. Employees who are bound by the law have enjoyed a decline in working hours and the over-52-hour ratio. However, in the service sector, the policy has lowered the probability of working more than 52 hours only for employees with a high degree of policy bindingness.

Table 9. Effects on Work-hour Outcomes by Industry

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	lnhours	lnhours	over52	over52	bt4152	bt4152

C-1. MANUFACTURING						
$tr52$	0.007	0.009	0.004	0.008	0.034*	0.032
	(0.014)	(0.014)	(0.011)	(0.011)	(0.020)	(0.020)
$tr52 \times over52_0$		-0.166***		-0.325***		0.131
		(0.045)		(0.058)		(0.109)
Observations	189,593	189,547	191,267	191,221	191,267	191,221
R-squared	0.087	0.087	0.042	0.043	0.023	0.023
C-2. SERVICE						
$tr52$	0.015	0.011	-0.005	-0.011*	0.000	0.008
	(0.012)	(0.015)	(0.005)	(0.006)	(0.007)	(0.011)
$tr52 \times over52_0$		-0.056		-0.093*		0.114
		(0.110)		(0.050)		(0.110)
Observations	661,483	661,453	675,104	675,070	675,104	675,070
R-squared	0.257	0.257	0.088	0.088	0.057	0.057
Time	YES	YES	YES	YES	YES	YES
Industry-Size	YES	YES	YES	YES	YES	YES
Industry-Time	YES	YES	YES	YES	YES	YES
Size-Time	YES	YES	YES	YES	YES	YES

*** p<0.01, ** p<0.05, * p<0.1

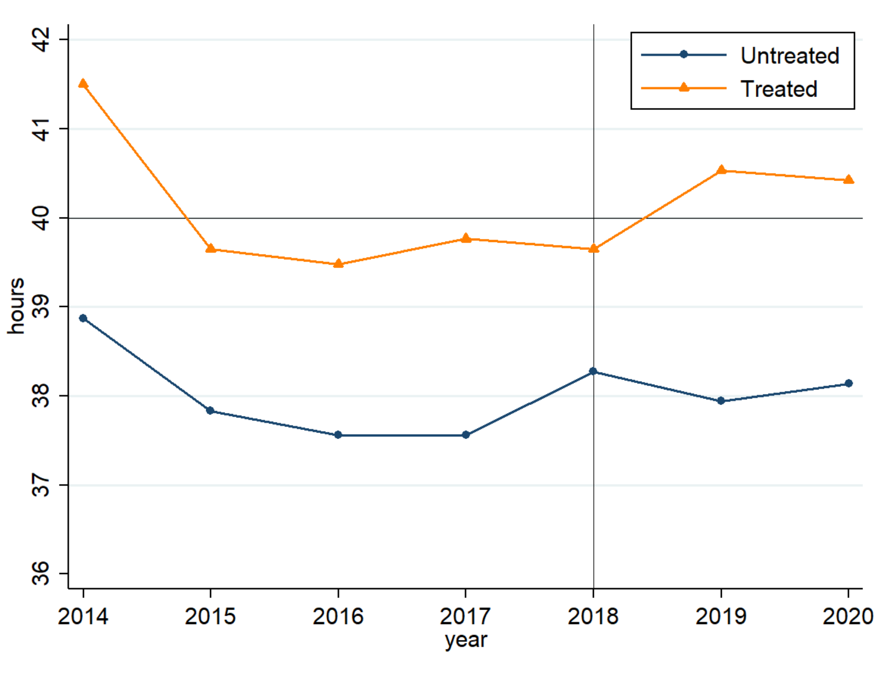
This table presents the effects of the maximum workweek reduction on the workhour outcomes by industry. The sample is restricted to the period between the first half of 2017 and the first half of 2020. To calculate the initial working hours of each industry-size cell, the data for the period from the second half of 2014 to the second half of 2016 are used. Missing observations left the bindingness undefined for some cells. Columns (1)–(6) report the results from different specifications, including fixed effects. Robust standard errors, which are obtained by clustering error terms at the industry-size cell level, as suggested in Bertrand et al. (2004), are shown in parentheses.

V.3. Channel

The question of how the ratio of those working between 41 and 52 hours a week increases remains. Naturally, limiting the maximum working hours to 52 forces those who used to work more than 52 hours to work a shorter number of hours than ever. However, the results robustly show that the increase in the between-41-and-52-hour ratio is estimated to be larger than the decrease in the over-52-hour ratio. This means that more workers enter the interval between 41 and 52 hours due to the policy. A feasible channel is an increase in the working hours of those who used to work 40 hours or less a week, as discussed in Section II.2. Accordingly, it is necessary to check whether short-type workers start to work longer hours because of the policy.

Figure 3 illustrates how the difference in the average working hours of short-type workers between the treatment group and the control group diverges over time, using a longitudinal dataset from the Korean Labor and Income Panel Study (KLIPS) between 2014 and 2020. As working for a set of different employers is likely to confound the estimates, the sample is restricted to individuals who did not change jobs since 2014. Short-type workers are characterized as respondents who work 40 hours or less during the period from 2014 to 2017. Whereas the average working hours in the untreated firms temporarily shift from the previous trend in 2018 and then return to normal, those in the treated firms persistently increase since the policy has been implemented. This divergence provides suggestive evidence that the change in the intensive margin has contributed to the increase in the between-41-and-52-hour ratio.

Figure 3. Evolution of Average Working Hours of Short-type Workers in Continuous Service



This figure uses a longitudinal dataset from the Korean Labor and Income Panel Study (KLIPS) between 2014 and 2020. The sample consists of wage workers whose workplaces remain constant during the period between 2014 and 2020, and whose median working hours from 2014 through 2017 are no larger than 40. Missing information on the firm size of each individual is imputed by the mode of the value over time. The estimates are calculated by multiplying individual weights.

VI. Conclusion

This paper examines whether the statutory limit on total working hours has decreased the actual number of working hours in Korea. There has been extensive research on the impact of a decrease in standard working hours. However, only a few papers have explored the effects of a decline in the maximum number of working hours. In this paper, the causal effects of the maximum workweek reduction on the reallocation of working hours are estimated by utilizing exogenous variations in working hours triggered by a statutory decline in the maximum working hours in South Korea. The results show that the 52-hour limit failed to reduce actual working hours but significantly transformed the distribution of working hours. Male workers and low-educated workers have undergone more dramatic change than female workers and high-educated workers respectively. Also, the aspects of transitions in work-hour outcomes differ between the manufacturing sector and the service sector. An increase in the ratio of working modest overtime occurred, which seems to be triggered by the increase in short-type working hours in the intensive margin of the labor market.

Nevertheless, this paper has three major limitations. First, to simplify the theoretical analyses, a short-term model, excluding capital from production inputs, is built. However, a spike in labor costs arising from the regulation is likely to provide firms with economic incentives to substitute labor with capital in the long run. Second, the period used in the research is too short to estimate the long-term effects of the 52-hour limit. Nevertheless, the COVID-19 pandemic and an additional reform to mandate paid leave for public holidays would confound the effects after the period. Finally, the estimation results cannot be generalized to the whole economy, as the sample is restricted to wage workers. As there are many self-employed workers in South Korea, more studies on changes in their working-hour patterns can facilitate a better understanding of the impact of the reduction in the maximum number of working hours on the labor market.

Appendix

A. Proof for the Labor Demand Model with One-Type Workers

Let a firm solve the following optimization problem with the standard working hours h_0, the maximum working hours $\breve{h}$, the weekly wage W, the overtime premium α, and the fixed cost of employment F given.

$$\min_{h,n} C(h,n) = \left(\frac{W}{h_0} min\{h, \breve{h}\} + F + \alpha \frac{W}{h_0} min\{max\{0, h - h_0\}, \breve{h} - h_0\}\right) n$$

$$s.t.\ Q = q(h,n),$$

where q is non-decreasing, strictly concave and differentiable. The discontinuity at $h = h_0$ and $h = \breve{h}$ makes three possible cases: Case 1 where $\breve{h} < h$; Case 2 where $h_0 < h < \breve{h}$; and Case 3 where $h < h_0$.

First, considering Case 1, the first-order conditions and the corner solution are respectively given by

$$\begin{cases} \frac{W}{h_0}\breve{h} + F + \alpha\frac{W}{h_0}\left(\breve{h} - h_0\right) - \lambda q_n = 0 \\ Q - q\left(\breve{h}, n^*\right) = 0 \end{cases} \quad \text{and } h^* = \breve{h}.$$

Note that the equilibrium working hours are suboptimal for the firm. Accordingly, the effects of a change in the maximum working hours, $\breve{h}$, are obtained from a comparative static analysis of the aforementioned equations. By Implicit Function Theorem and the fact that $h^* = \breve{h}$ in the equilibrium,

$$\frac{dn^*}{d\breve{h}} = \frac{(1+\alpha)\frac{W}{h_0} - \lambda q_{nh}}{\lambda q_{nn}} \text{ and } \frac{dh^*}{d\breve{h}} = 1.$$

Second, in Case 2, the first-order conditions are derived as follows.

$$\begin{cases} \frac{W}{h_0}h^* + F + \alpha\frac{W}{h_0}(h^* - h_0) - \lambda q_n = 0 \\ \frac{W}{h_0}n^* + \alpha\frac{W}{h_0}n^* - \lambda q_h = 0 \\ Q - q(h^*, n^*) = 0 \end{cases}.$$

Note that no term related to $\breve{h}$ is contained in the equations. Hence,

$$\frac{dn^*}{d\breve{h}} = 0 \text{ and } \frac{dh^*}{d\breve{h}} = 0.$$

Third, the equilibrium working hours and employment satisfy the following system.

$$\begin{cases} \frac{W}{h_0}h^* + F - \lambda q_n = 0 \\ \frac{W}{h_0}n^* - \lambda q_h = 0 \\ Q - q(h^*, n^*) = 0 \end{cases}.$$

The system is not affected by a change in $\check{h}$, which is analogous to Case 2. Consequently,

$$\frac{dn^*}{d\check{h}} = 0 \text{ and } \frac{dh^*}{d\check{h}} = 0.$$

B. Proof for the Labor Demand Model with Two-Type Workers

Suppose that there are conceptually two types of workers a firm can choose to solve its optimization problem in the labor market: the long-type workers denoted by L, who supply long working hours, and the short-type workers denoted by S, who supply short working hours. By definition, a long-type worker's working hours, h_L, should be no less than a short-type worker's, h_S.

$$\min_{h_L, n_L, h_S, n_S} \mathrm{C}(h_L, n_L, h_S, n_S)$$
$$= \left(\frac{W_L}{h_0} min\{h_L, \check{h}\} + F + \alpha \frac{W_L}{h_0} min\{max\{0, h_L - h_0\}, \check{h} - h_0\}\right) n_L$$
$$+ \left(\frac{W_S}{h_0} min\{h_S, \check{h}\} + F + \alpha \frac{W_S}{h_0} min\{max\{0, h_S - h_0\}, \check{h} - h_0\}\right) n_S$$

$s.t.\ Q = q(h_L, n_L, h_S, n_S),$

where q is non-decreasing, strictly concave, and differentiable. Even if there are six possible cases in this model, the process to derive the derivatives with respect to the maximum working hours, $\check{h}$, is so parallel to that in the previous section that it is sufficient to just consider the case where $h_S < h_0 < \check{h} < h_L$ as a baseline. In this case, the labor market outcome equilibria satisfy

$$\begin{cases} \frac{W_L}{h_0}\breve{h} + F + \alpha\frac{W_L}{h_0}\left(\breve{h} - h_0\right) - \lambda q_{n_L} = 0 \\ \frac{W_S}{h_0}h_S^* + F - \lambda q_{n_S} = 0 \\ \frac{W_S}{h_0}n_S^* - \lambda q_{h_S} = 0 \\ Q - q\left(\breve{h}, n_L^*, h_S^*, n_S^*\right) = 0 \end{cases} \quad \text{and } h_L^* = \breve{h}.$$

A comparative static analysis of these equations reveals the relations between $\breve{h}$ and labor inputs such as h_L, n_L, h_S and n_S. By Implicit Function Theorem,

$$\begin{bmatrix} -\lambda q_{n_L n_L} & -\lambda q_{n_L n_S} & -\lambda q_{n_L h_S} \\ -\lambda q_{n_S n_L} & -\lambda q_{n_S n_S} & \frac{W_S}{h_0} - \lambda q_{n_S h_S} \\ -\lambda q_{h_S n_L} & \frac{W_S}{h_0} - \lambda q_{h_S n_S} & -\lambda q_{h_S h_S} \end{bmatrix} \begin{bmatrix} \frac{dn_L^*}{d\breve{h}} \\ \frac{dn_S^*}{d\breve{h}} \\ \frac{dh_S^*}{d\breve{h}} \end{bmatrix} = -\begin{bmatrix} (1+\alpha)\frac{W_L}{h_0} - \lambda q_{n_L h_L} \\ -\lambda q_{n_S h_L} \\ -\lambda q_{h_S h_L} \end{bmatrix},$$

and

$$|\mathrm{J}| = \begin{vmatrix} \lambda q_{n_L n_L} & \lambda q_{n_L n_S} & \lambda q_{n_L h_S} \\ \lambda q_{n_S n_L} & \lambda q_{n_S n_S} & \lambda q_{n_S h_S} - \frac{W_S}{h_0} \\ \lambda q_{h_S n_L} & \lambda q_{h_S n_S} - \frac{W_S}{h_0} & \lambda q_{h_S h_S} \end{vmatrix}.$$

Thus, by Crammer's Rule,

$$\frac{dn_L^*}{d\breve{h}} = \frac{1}{|\mathrm{J}|}\begin{vmatrix} (1+\alpha)\frac{W_L}{h_0} - \lambda q_{n_L h_L} & \lambda q_{n_L n_S} & \lambda q_{n_L h_S} \\ -\lambda q_{n_S h_L} & \lambda q_{n_S n_S} & \lambda q_{n_S h_S} - \frac{W_S}{h_0} \\ -\lambda q_{h_S h_L} & \lambda q_{h_S n_S} - \frac{W_S}{h_0} & \lambda q_{h_S h_S} \end{vmatrix}$$

$$\frac{dn_S^*}{d\breve{h}} = \frac{1}{|\mathrm{J}|}\begin{vmatrix} \lambda q_{n_L n_L} & (1+\alpha)\frac{W_L}{h_0} - \lambda q_{n_L h_L} & \lambda q_{n_L h_S} \\ \lambda q_{n_S n_L} & -\lambda q_{n_S h_L} & \lambda q_{n_S h_S} - \frac{W_S}{h_0} \\ \lambda q_{h_S n_L} & -\lambda q_{h_S h_L} & \lambda q_{h_S h_S} \end{vmatrix}$$

$$\frac{dh_S^*}{d\check{h}} = \frac{1}{|J|}\begin{vmatrix} \lambda q_{n_L n_L} & \lambda q_{n_L n_S} & (1+\alpha)\dfrac{W_L}{h_0} - \lambda q_{n_L h_L} \\ \lambda q_{n_S n_L} & \lambda q_{n_S n_S} & -\lambda q_{n_S h_L} \\ \lambda q_{h_S n_L} & \lambda q_{h_S n_S} - \dfrac{W_S}{h_0} & -\lambda q_{h_S h_L} \end{vmatrix}.$$

Similarly, since $h_L^* = \check{h}$ in the equilibrium,

$$\frac{dh_L^*}{d\check{h}} = 1.$$

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초 록

본 논문은 이중 차분법을 사용해서 한국의 주 52시간 근로제로 인해 근로시간 분포가 어떻게 변천했는지 연구한다. 주 52시간 근로제는 한국에서 법정 주간 최대 근로시간을 68시간에서 52시간으로 줄이기 위해 2018년에 제정되었다. 이를 통해 근로시간 상한은 산업과 사업체 규모에 따라 점진적으로 감소했다. 이론 모형에서 예측하는 바와 같이, 실증 결과에 따르면 근로시간 규제가 전반적인 근로시간을 통계적으로 유의하게 줄였다는 증거는 없다. 오히려, 근로시간 규제는 주 52시간을 초과하여 일할 확률을 약 0.9% 포인트 감소시키고 주 41시간에서 52시간까지 일할 확률을 약 1.2% 포인트 증가시켰다. 이는 기업이 주 52시간 근로제를 준수하기 위해 평균적으로 근로시간을 줄이기 보다는 근로시간의 분포를 재편했다는 것을 암시한다.

주요단어 : 주 52시간 근로제, 주간 최대 근로시간 단축, 초과근로, 근로시간 재분배, 이중 차분법
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