# DISCUSSION PAPERS IN ECONOMICS

Working Paper No. 22-03

Effec f a a a e c
a c !
!
!
!

Depar men of Economics

Uni ersi of Colorado Bo lder
Bo lder, Colorado 80309

*Jieun Lee**

# E□ects of a national work hours restriction in a high hours country

## Abstract

# 1 Introduction

Long work hours cause negative impacts to the health and safety of workers, families, and society overall. (Harrington, 2001; Caruso, 2006; Caruso, 2014). As South Korea has been known for its long work hours compared to other Organization for Economic Cooperation and Development (OECD) countries (OECD, 2020), the South Korean government tried to decrease work hours by passing an amendment to the Korean Labor Standards Act in February 2018. According to the amendment, the maximum work hours per week decreased from 68 h to 52 h, including overtime and weekend work.

In this paper, I study how the new workweek limit in Korea a ects individual-level labor market outcomes including work hours, monthly earnings, and hourly wages. Changes in individual worker hours, wage, and earnings, however, will not fully capture the policy e ects, as employers may also adjust employment levels. To understand the e ect of the policy on the amount of labor hired and labor costs of employers, I also analyze total worker hours, total employment, and total worker pay at the industry-occupation-education group level.

If the new work hour restriction induces a decline in work hours, the resulting labor supply decrease should increase the hourly wage. However, the policy impact on average worker earnings is ambiguous, depending on the o setting e ects on work hours and hourly wage. At the industry-occupation-group levelJETEMC /Span atA(o)10.6(u)-78(o)13.9(y)S-h5 99.2126 532.6818ni3(tTd7.7(r)2.4

Before the amendment to the Labor Standards Act was passed by the National Assembly in February 2018, South Korean workers were legally allowed to work up to 68 h/week. e relevant provisions are as follows: Article 50 (*W H* ) paragraph 1 of the Labor Standards Act states that ‘ *a 40 a* ’ , . Article 50 paragraph 2 states that ‘ *a a a* , . Article 53 (*R E W* ) paragraph 1 states that ‘ *a a - a* ’ *a* , ‘ *A 50 a 12* ’ . However, weekend work had not been regarded as extended work because the ministry of Employment and Labor had interpreted that 1 week in the Labor Standards Act is Monday to Friday. erefore, South Korean workers could work up to 68 h from Monday to Sunday, which consisted of 40 h of standard workweek, 12 h of extended work during weekdays, and 16 h of work during weekends. e amendment to the Labor Standards Act added a new paragraph to Article 2 (*D* ) that the term “1 week” means 7 days including holidays, e ectively restricting the legally allowed maximum work hours to 52 h/week. Additionally, while formerly exemptions from Article 59 had been granted to 26 industries, -

I use the constructed hourly wages for salary workers while using reported hourly wages for hourly workers.

For the group-level outcome variables, I measure each variable by using the work hours data for all workers and full-time workers individually. Speci cally, for total work hours, I individually sum actual hours worked of all workers and full-time workers at the industry-occupation-education group level. Total employment is constructed by counting the number of male workers aged between 25 and 55, who worked at least an houroFo521(l)7.83(521(l40r)5541.8(7.71369 0 T( 6

**Table 2** Summary statistics for policy intensity

| Min | 1st Quartile | 2nd Quartile | 3rd Quartile | Max | Mean | SD |
|---|---|---|---|---|---|---|
| 0.009 | 0.135 | 0.192 | 0.241 | 0.862 | 0.200 | 0.099 |
| Proportion of workers working >52 h | | | | 19.63% | | |
| Observations | | | | | | |

changes in labor market outcomes observed across treated industry-occupation-education groups would have been the same as those of untreated groups, in the absence of the policy change.

I use two-way xed e ect models to estimate the e ect of the policy change on the outcome variables. First, since actual hours worked are drawn from individual-level monthly data, I use the following estimating equation:

$$Y = P + \beta \cdot D \cdot P + \gamma + \delta + \delta + \lambda X + \varepsilon \quad (1)$$

where denotes an individual worker, denotes an industry-occupation-education group, denotes month, and denotes year. $P$ takes the value of 0 from January 2016 to February 2018, and 1 from July 2018 onwards. I exclude March to June 2018 to rule out any possible anticipation e ect. $D$ is the proportion of workers who worked longer than 52 h/week prior to the policy change at the industry-occupation-education level and measures the policy intensity. $\gamma$ are industry-occupation-education xed e ects, $\delta$ are month xed e ects, and $\delta$ are year xed e ects. $X$ includes demographic and job characteristics that are listed in Panels C and D in Table 1.

Second, since usual hours worked, monthly earnings, and hourly wages are drawn from individual-level annual data from the August surveys, I use the following estimating equation:

$$Y = \beta \cdot D \cdot P + \gamma + \delta + \lambda X + \varepsilon \quad (2)$$

e estimating equation is similar to Eq. (1), except that I drop the month xed e ects and the post-period dummy variable in estimation. Since the August surveys collect a rich set of information on job characteristics, described in Panel E in Table 1, I include these additional job characteristics in addition to those in Panels C and D as controls in the regression. Monthly earnings and hourly wages are log transformed.

For total work hours, total employment, and total worker pay at the industry-occupation-education group level, I use the following estimating equation:

$$Y = P + \beta \cdot D \cdot P + \gamma + \delta + \delta + \lambda X + \varepsilon \quad (3)$$

where $X$ is a vector of the mean values of demographic and job characteristics at the industry-occupation-education level. For total pay, I drop the month xed e ects and the post-period dummy variable, $P$ because it is constructed by using annual data. All group-level outcome variables are log transformed.

In all regressions, standard errors are clustered at the industry-occupation-education level. While the individual-level regressions are weighted by individual sampling weight, the

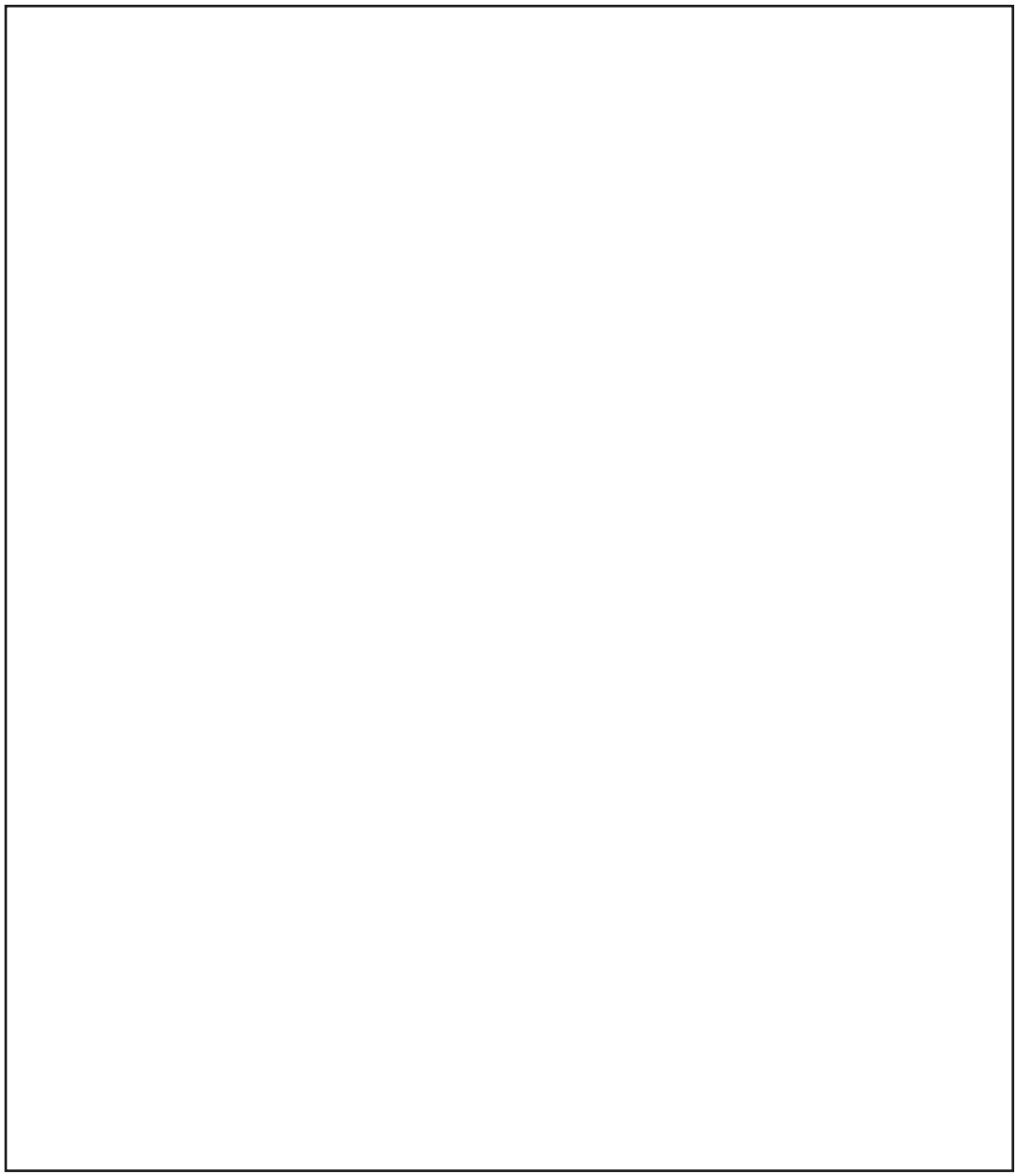
higher in groups with 20% above 52 h in the pre-period than groups with 0%. e corresponding value for hourly wages is 3.38 percentage points.

ese results are comparable to those in previous studies that estimated labor market impacts of reductions in the standard workweek. First of all, the estimated 51-min decline in actual hours worked a week is larger than a 43-min decline in hours worked that resulted from a 4-h reduction in the standard workweek, from 44 h/week to 40 h/week, that was rolled out in South Korea from 2004 to 2009 (Kim and Lee, 2012). On the other hand, the estimated 55-min decline in usual hours worked a week is smaller than a 2-h-46-min decrease in hours worked that resulted from a 3-h reduction in the standard workweek, from 48 h to 45 h, that was implemented in Chile in 2005 (Sánchez, 2013). In addition, the estimated hourly wage increase by 3.38 percentage points is larger than a 0.31-percentage-point increase in the hourly wage that resulted from a 2-h reduction in the standard workweek, from 42 h to 40 h, which was in e ect in the United States starting October 1939 (Costa, 2000), and a 1.9 percentage point increase in the hourly wage in Chile (Sánchez, 2013), while it is smaller than a 6.6-percentage-point increase in the hourly wage that resulted from the 4-h reduction in the Korean standard workweek (Kim and Lee, 2012).

Table 4 shows the group-level estimation results. Although all the estimates at the group-level are statistically insigni cant, they show that the new work hour restriction reduces total work hours, total employment, and total worker pay. Speci cally, total work hours decrease,

**Table 4** Group-level estimation results

**Figure 4** Group-level event-study estimates.



*N* ˇ : The new work hour restriction was passed on February 28, 2018 and was first implemented on July 1, 2018. (A) Total work hours are the sum of actual hours worked of all male workers between the ages of 25 and 55 who worked at least an hour in the reference week in all industries and establishment sizes subject to the new restriction. (B) Total work hours are the sum of actual hours worked of all male workers between the ages of 25 and 55 who worked more than 34 h in the reference week in all industries and establishment sizes subject to the new restriction. (C) Total employment is the number of all male workers between the ages of 25 and 55 who worked at least an hour in the reference week in all industries and establishment sizes subject to the new restriction. (D) Total employment is the number of all male workers between the ages of 25 and 55 who worked more than 34 h in the reference week in all industries and establishment sizes subject to the new restriction. (E) Total worker pay is the sum of monthly earnings of all male workers between the ages of 25 and 55 who usually worked at least an hour per week in all industries and establishment sizes subject to the new restriction. (F) Total worker pay is the sum of monthly earnings of all male workers between the ages of 25 and 55 who usually worked more than 34 h/week in all industries and establishment sizes subject to the new restriction.

**Table 5** Pre-trend tests for individual-level outcomes

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| | **Actual hours** | **Usual hours** | **Log monthly earnings** | **Log hourly wages** | **Usual hours** | **Log monthly earnings** | **Log hourly wages** |
| Treatment effect | −1.092 | | | | | | |
| | (0.985) | | | | | | |