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Research Report

OECD average annual hours worked: Comparative analysis and implications

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KDI FOCUS

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For Inquiry KDI Communications Unit

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The OECD statistics on annual hours worked per person are often cited as evidence for Korea's long working hours, but this in fact tends to be the result of the nation's high proportion of self-employed workers and low proportion of part-time workers. When this distinct employment composition is taken into account, the difference between Korea's hours worked and those of other OECD countries turns out to be much less significant compared to previous estimates. However, Korea's hours worked do remain relatively longer even after such an adjustment. Therefore, it is important to figure out and thereby address underlying institutional factors of unproductive long working hours. Furthermore, flexible and choice-based working arrangements should be promoted for improving labor market efficiency.



Video Report

OECD Average Annual Hours Worked: Comparative Analysis and Implications

MinSub Kim, Fellow at KDI



I. Background

Since the proportion of self-employed and part-time workers differs from country to country, inappropriate to make direct comparisons of the average hours worked per person across different countries without considering such factors.

Each year, the Organisation for Economic Co-operation and Development (OECD) releases data on the average annual hours worked per person for each country. This data is frequently cited in media and academic discussions to highlight South Korea's reputation as a country with long working hours. According to the latest 2022 figures, Korean employees (the average number of people in employment per year) work an average of 1,901 hours per year—149 hours longer than the OECD average of 1,752 hours. However, it should be noted that the OECD's average annual hours worked cover all types of employment, including full-time workers (over 40 hours per week), part-time workers¹⁾ (less than 30 hours per week), and self-employed individuals.²⁾ Such a comprehensive scope aligns with its purpose to measure a country's total labor input rather than to facilitate a direct comparison of working hours among countries for an extended period of time. Accordingly, the OECD advises caution against simplistic cross-country comparisons based on these figures (OECD, 2023).

Nevertheless, understanding Korea's hours worked in the context of those of other OECD nations can be valuable in shaping policy directions that accurately reflect Korea's labor market situations. Using the OECD data, this study explores key considerations in comparing annual hours worked across countries and conducts a comparative analysis of the annual hours worked in Korea with those of other nations.

II. OECD Annual Hours Worked: An Analysis of Current Trends

The OECD's annual hours worked intend to measure hours actually worked—the actual number of hours that employed persons in a country put into producing goods and services. In this regard, annual hours worked differ from scheduled working hours outlined in employment contracts or statutory working hours prescribed by law

* Summarized and adapted from Joseph Han *et al.*, *Analysis and Comparative Study of National Working Hours Based on Labor Systems and Employment Structure*, Korea Development Institute, 2023.

- 1) This report defines “part-time employment” as per the definition given by the OECD (Organisation for Economic Co-operation and Development) which refers to both employees and self-employed workers “who usually work less than 30 hours per week in their main job.” In Korea, however, the term commonly refers to non-regular employment or work with hourly rates.
- 2) It is to be noted that the OECD publishes annual hours worked not only for the total number of employed persons but also for dependent employees. For simplicity's sake, however, this study solely focuses on the annual working hours for the total number of employed persons.

or regulation.³⁾

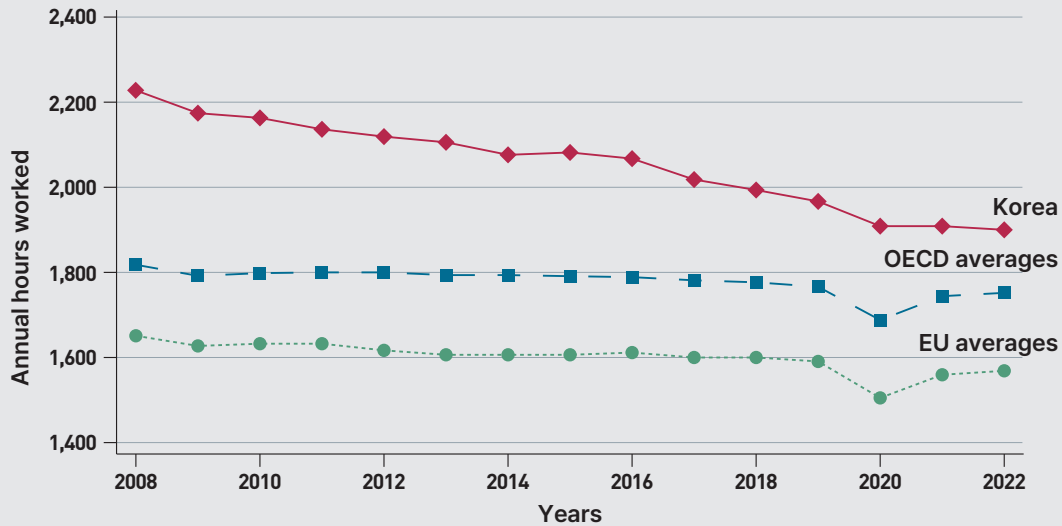
The ultimate purpose of the OECD's hours actually worked is to compile the National Account System and gauge productivity by country. This requires calculating the total number of employees engaged in production activities and their collective annual hours actually worked for each country. The annual hours worked per worker, which is the focus of this study, are determined by dividing a country's total hours actually worked in a year by its total number of employed persons. In theory, any employee who has worked even just one hour is included in the statistics of annual hours worked.

Korea's annual hours worked per worker are rapidly declining, primarily due to improvements in productivity resulting from economic growth and institutional efforts to reform long working practices.

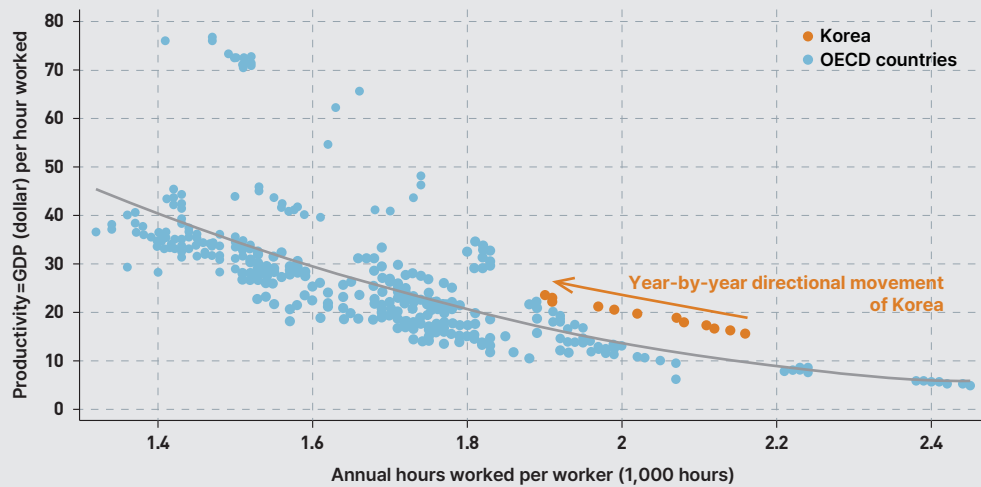
To begin, a brief overview of recent OECD data on annual hours worked reveals some notable trends. Figure 1 illustrates the trajectories of annual hours worked per person in Korea and other OECD member countries. Except for the temporary decrease in 2020 due to the shock of COVID-19, annual hours worked in OECD and EU countries generally maintain a stable level or exhibit a gradual decline. In contrast, Korea shows a rapid long-term decrease, with limited impact from the pandemic.

Korea's decline in hours worked is fundamentally attributable to enhanced productivity associated with economic growth. Figure 2 illustrates a generally observed negative correlation between labor productivity (or income per hour) on the vertical axis and hours worked on the horizontal axis. This correlation shows that in countries where labor productivity has improved, thereby leading to increased incomes, workers tend to increase leisure time and reduce hours worked. Korea also demonstrates a clear downward trend in annual hours worked, suggesting a shift toward valuing leisure time over the economic benefits of extended hours worked. Another factor contributing to the reduction in hours worked is institutional efforts to reform long working hours practices, such as the implementation of a 52-hour workweek limit (Carcillo *et al.*, 2023).

3) The International Labour Organization (ILO) provides a detailed definition of actual hours worked (ILO, 2008). This includes time spent on actual production activities, time spent on job-related compensation, maintenance, waiting, travel, training, time temporarily stopped due to a lack of work, machine breakdown, accidents, and short breaks at the workplace (such as tea time, etc.). However, it does not include public holidays, annual leave, sick leave, maternity leave, parental leave, strikes, commuting time, longer breaks (such as meal time, etc.), and education or training that is unrelated to work.

Figure 1. Changes in Annual Hours Worked in OECD Countries

Note: Trends in annual hours worked per worker within the total number of employed persons
Source: OECD.Stat, 2008–22 (last access: Jun. 5, 2023).

Figure 2. Annual Hours Worked and Labor Productivity in OECD Countries

Note: A replication of Figure 1 from Park and Park (2017), updated with recent data. Each point denotes a combination of the corresponding country and year, and the productivity on the vertical axis is calculated as Gross Domestic Product (GDP) per capita based on the Purchasing Power Parity (PPP) divided by annual hours worked. The arrow indicates the year-by-year directional movement of Korea.

Source: OECD.Stat, 2010–22 (last access: Nov. 28, 2023).

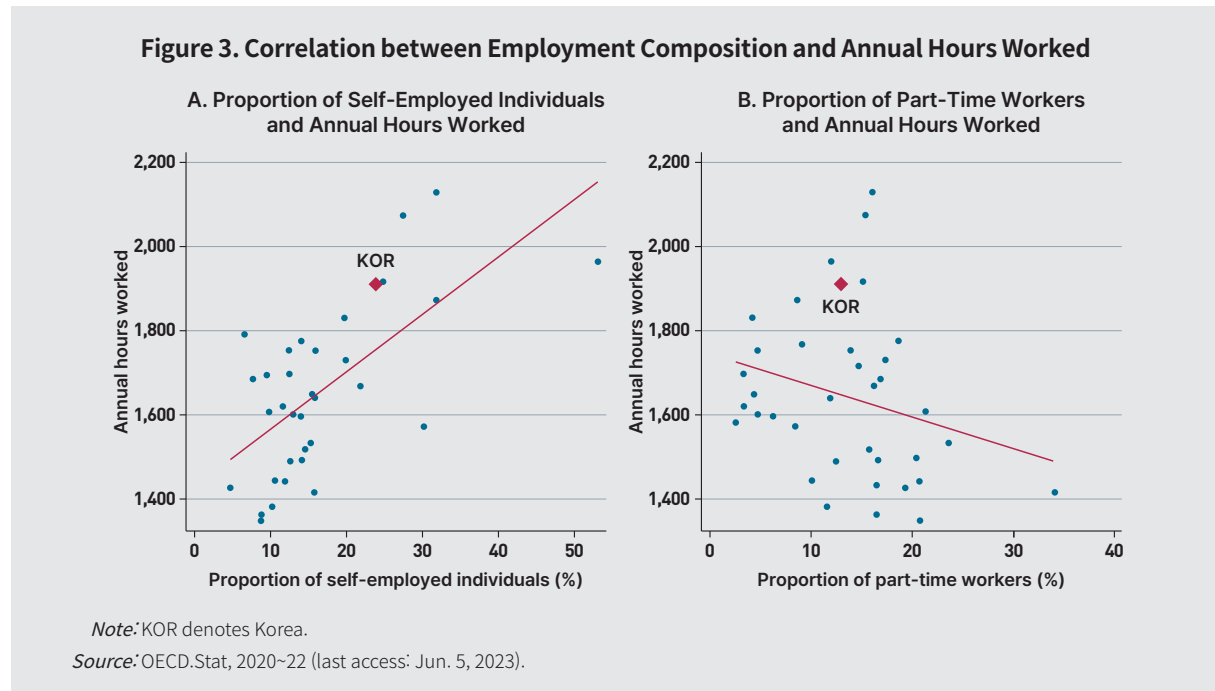
Despite the pronounced decreasing tendency, Korea's annual hours worked still remain substantially longer than other countries. As of 2022, the annual hours worked per employed person in Korea (1,901 hours) ranked fifth among the 38 OECD member countries, which is 149 hours longer than the OECD average of 1,752 hours.

III. Considerations in Comparing Annual Hours Worked: Employment Composition Effect

Annual hours worked per person tend to increase when the proportion of self-employed individuals among total employment rises, and decrease when the proportion of part-time workers increases.

How is this gap to be interpreted? At first glance, it may seem that Korean workers put in an extra 30 to 40 minutes each day due to overtime and weekend work compared to workers in other OECD countries, who generally work from 9 to 5, five days a week. However, this assumption fails to account for the varying compositions of employment types across countries, including self-employed individuals and part-time workers (working less than 30 hours per week). Therefore, simply comparing the OECD's annual hours worked between countries is not advisable.

In general, self-employed individuals work longer hours than full-time employees, whereas part-time workers log fewer hours. However, since the annual hours worked per person reflect the average across all employed individuals, this average that accounts for an entire country may be relatively long or short depending on the employment composition. In other words, the annual hours worked per person tend to be longer in countries where self-employed individuals make up a higher proportion of the total workforce, and conversely, shorter in countries with a higher proportion of part-time workers.



The aforementioned relationship is depicted in Figure 3. The horizontal axis shows the percentage of self-employed and part-time workers in individual OECD countries, while the vertical axis

displays annual hours worked. The regression line in red represents the correlation between these two variables, indicating that countries with a higher proportion of self-employed individuals generally have longer annual hours worked, and those with more part-time workers tend to have shorter hours. In particular, Korea is characterized by a higher proportion of self-employed individuals and a lower proportion of part-time workers. Consequently, it is reasonable to anticipate that such an employment composition has a considerable effect on Korea's annual hours worked (employment composition effect).

Also, a two-way fixed effects regression analysis is conducted to assess the importance of the proportion of self-employed and part-time workers in understanding the annual hours worked in each country. This analysis controls for (1) country-specific characteristics that remain constant over time and (2) trends in factors that are common to all countries on an annual basis. It estimates the correlation between year-on-year changes in the proportion of self-employed and part-time workers within individual countries and the changes in annual hours worked. Data from 30⁴⁾ out of the 38 OECD member countries, for which analysis data was available, are used for the years 2010 to 2021.

The results in Table 1 demonstrate a robust correlation between employment composition and annual hours worked. Each 1%p increase in the proportion of self-employed individuals within the entire workforce leads to an approximate increase of 10 hours in annual hours worked per person within an individual country. Conversely, a 1%p rise in the proportion of part-time workers corresponds to a decrease of about 9 hours in annual hours worked per person.

4) Due to insufficient data availability, this study excludes eight countries from its analysis: Costa Rica, Estonia, Iceland, Ireland, Luxembourg, Slovakia, the UK, and the US.

**Table 1. Impacts of Employment Composition of Annual Hours Worked
(Employment Composition Effect)**

Variable	(1)	(2)	(3)	(4)
• Proportion of self-employed individuals (%)	9.754*** (3.258)	10.883*** (3.352)	10.957*** (3.172)	10.213*** (2.740)
• Proportion of part-time workers (%)	-9.132*** (2.471)	-7.768*** (2.259)	-7.835*** (2.285)	-8.572*** (2.366)
Country- and year-fixed effect	Y	Y	Y	Y
Population composition by age		Y	Y	Y
Population composition by gender			Y	Y
Minimum wage level				Y
Nob.	341	341	341	341

Note: 1) Dependent variable is annual hours worked. () are standard errors clustered by country. *** p < 0.01, ** p < 0.05, * p < 0.1.

2) Population composition by age: The proportion of employed individuals aged 15-19, the proportion of those aged 65+, and the interaction term between the proportion of individuals aged 65+ and the proportion of self-employed individuals among total employment.

3) Population composition by gender: Women aged 15-49 as a percentage of total employment.

4) Minimum wage is calculated based on Purchase Power Parity (PPP). Countries without a legal minimum wage set the minimum wage at \$0.

Source: OECD. Stat, 2010~21 (last access: Jun. 5, 2023).

Based on the findings in Table 1, this study can re-estimate the annual hours worked in each country where hypothetically, the employment composition is consistent across all countries. For this purpose, the proportions of self-employed individuals and part-time workers in each country are calibrated to the average level observed in the 30 analysis countries⁵⁾ in order to recalculate the annual hours worked (adjusted annual hours worked). Figure 4 presents these adjusted hours in descending order, starting with the countries with the longest original working hours (i.e., the further a country is located on the left of the graph, the longer are its original working hours, and conversely, the further a country is located on the right of the graph, the shorter are its original working hours.)

Compared to other countries, Korea shows longer annual hours worked per person due to a higher proportion of self-employed and a lower proportion of part-

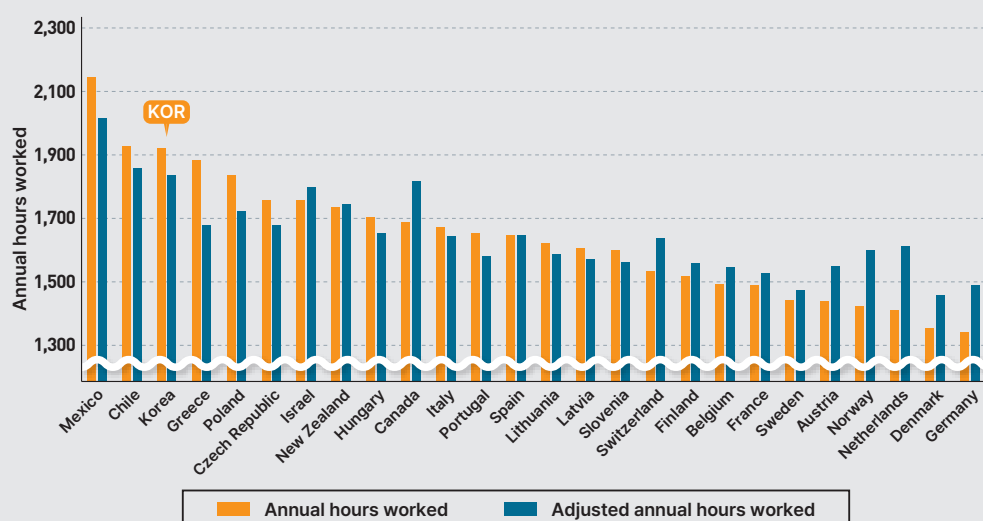
Figure 4 suggests that Korea's annual hours worked per person are relatively extended due to its distinct employment type composition. Since the adjusted annual hours worked are premised on the hypothesis that all countries have an identical employment composition, the difference between the original annual hours worked (orange bars) and the adjusted annual hours worked (light blue bars) can be interpreted as the extent of annual hours worked

5) In the analysis sample (30 OECD countries from 2010 to 2021), the average proportion of self-employed individuals among total employment is 17.35%, while the average proportion of part-time workers (those working less than 30 hours per week) is 14.50%.

time workers. Controlling for these differences in employment composition, the gap in annual hours worked between Korea and other OECD countries falls by approximately 31%.

resulting from the unique employment composition in each country. For example, Mexico and Korea, positioned on the left side of the figure, show relatively long annual hours worked due to a higher proportion of self-employed individuals or a lower proportion of part-time workers. Conversely, Germany and the Netherlands, on the right side of the figure, exhibit shorter annual hours worked due to a lower proportion of self-employed individuals or a higher proportion of part-time workers. In essence, countries with longer original annual hours worked tend to have lengthier hours due to their employment composition, while those with shorter original hours tend to have shorter hours for the same reason.

Figure 4. Annual Hours Worked Adjusted for Employment Composition (2021)



Note: The adjusted annual hours worked represent the annual hours worked when the proportions of self-employed and part-time workers across countries are standardized to the average level. Countries lacking the latest 2021 data are excluded.

Source: OECD.Stat, 2010–21 (last access: Jun. 5, 2023).

However, even when accounting for the impact of the proportion of self-employed and part-time workers, Korea remains among the nations with extended hours worked.

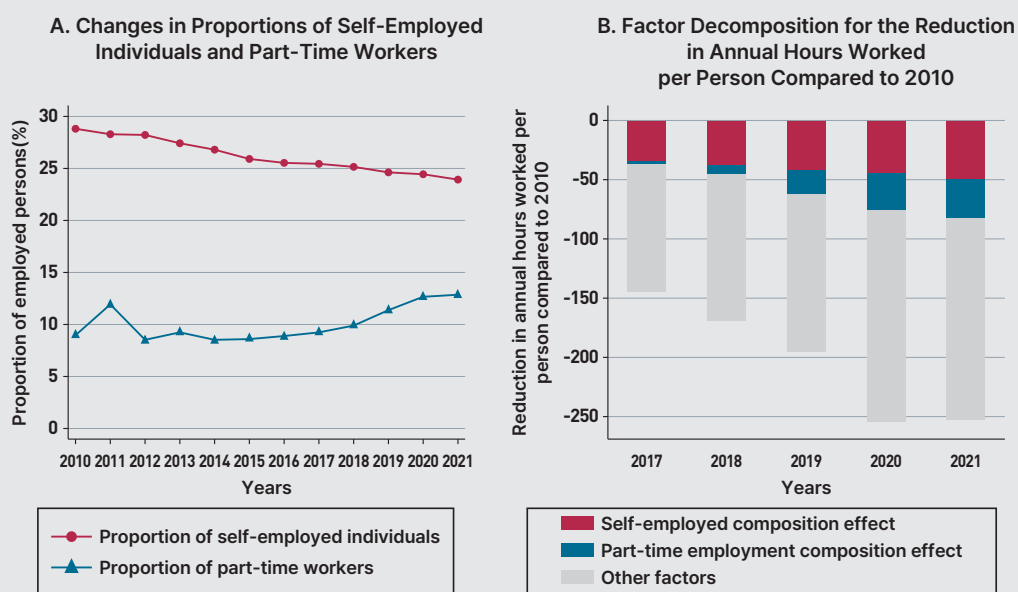
In addition, the analysis in Figure 4 confirms the following. First, when the proportions of self-employed and part-time workers are equalized across countries, there is a significant reduction in the disparity of annual hours worked among individual countries. Similarly, such an equalization narrows the gap between Korea and other OECD countries. In 2021, the gap in annual hours worked per person between Korea and the average of the 30 OECD countries analyzed was 264 hours (Korea: 1,910 hours, OECD average: 1,646 hours), but after adjustment, the gap reduced to 181 hours (Korea: 1,829 hours, OECD average: 1,648 hours), which is approximately a 31%

Approximately 33% of the reduction in Korea's annual hours worked per worker during 2010-2021 is attributable to the decrease in the proportion of self-employed workers and the increase in the proportion of part-time workers.

decrease. Second, even when considering the impact of employment composition, Korea's annual hours worked still remain somewhat longer compared to those of other OECD countries. This indicates that despite Korea's rapid decrease in working hours, the hours are still relatively higher compared to those of other OECD countries.

Employment composition is also an important factor that can account for changes in a country's annual hours worked over time. In the case of Korea, the proportion of part-time workers has noticeably increased over the past few years,⁶⁾ while the proportion of self-employed individuals has continuously decreased (Figure 5A).⁷⁾ This shift in employment composition has likely contributed to the decrease in its annual hours worked seen in Figure 1.

Figure 5. Changes in Employment Composition Effect by Year



Source: OECD.Stat, 2010~21 (last access: Jun. 5, 2023).

- 6) The recent increase in the proportion of part-time workers (working less than 30 hours per week) among total employment seems to be attributable to an increase in dependent employment aged 60+ in the public health and social work services industry. According to the Economically Active Population Survey, as of 2022, 27.8% of dependent employees working less than 30 hours per week were in the public health and social work services industry, a 15%p increase from 2012. Furthermore, the proportion of the elderly workforce aged 60+ was 42.4% in 2022, which is a 14%p increase from 2012.
- 7) The decrease in the proportion of self-employed individuals in total employment in Korea can be attributed more to the consistent increase in the number of dependent employees than to a decrease in the number of self-employed individuals (Kim and Kim, 2022). As economies expand, the growth in the number and size of businesses typically results in an increase in dependent employment opportunities and a simultaneous decline in the proportion of self-employed individuals. This trend is not unique to Korea and can be commonly observed in other OECD countries (Lee, 2020). Such economic expansion and the resulting economies of scale tend to enhance productivity and increase incomes, subsequently contributing to a reduction in working hours.

To verify the effect of changes in employment composition within a country over time, the study calculates how much of the reduction in Korea's annual hours worked since 2010 can be attributed to changes in employment composition based on the estimations in Table 1 (Figure 5B). The decreasing trend in the proportion of self-employed individuals has consistently played a role in reducing Korea's annual hours worked. It is found that about 50 hours (20%) of the 253-hour reduction in annual hours worked between 2010 and 2021 is due to the decrease in the proportion of self-employed individuals. On the other hand, the proportion of part-time workers, which did not significantly change until 2017, had a minimal impact on the annual hours worked. However, the recent rapid increase in part-time workers accounts for about 33 hours (13%) of the reduction over the same period. In short, approximately 33% of the decrease in Korea's annual hours worked between 2010 and 2021 can be attributed to changes in employment composition.

IV. Conclusion and Implications

Comprehensive and concerted policy efforts are necessary to facilitate a more inclusive labor market that accommodates diverse workforce groups, endorsing flexible working hours options and choice-based working arrangements.

This study shows that a simplistic comparison of OECD statistics on countries' annual working hours may be misleading, as it involves comparing countries with dissimilar employment compositions. The 264-hour difference in annual hours worked between Korea and the average of 30 OECD countries reflects the fact that Korea has a relatively higher proportion of self-employed individuals and a lower proportion of part-time workers. These results suggest that when differences in employment composition among different countries have been accounted for, the gap in annual hours worked between Korea and the 30 OECD countries drops to approximately 181 hours.

Nonetheless, Korea's working hours are still estimated to be longer than the average of the other OECD countries—even after considering the impact of the proportion of self-employed and part-time workers. Therefore, a closer examination is required to determine whether factors such as unreasonable wage systems or rigid labor time regulations are contributing to unproductive and lengthy working hour practices, and thereby facilitate a social and institutional environment for a more efficient labor market.

Furthermore, the low proportion of part-time workers among employed persons holds significant implications for setting Korea's future labor policy directions. While existing labor time policies mainly

focus on regulating the long working hours of full-time employees, it is important to expand working hours options by encouraging flexible work arrangements and selective working time systems. A labor market that assumes full-time employment as the primary form of employment may fail to accommodate workers with time constraints, and thus can be less inclusive. For example, working parents with young children may find it challenging to participate in such a rigid labor market. This leads to career interruptions and has proven to be a major cause of low birth rates. Therefore, flexible working hours based on voluntary employer-employee agreements need to be considered to better accommodate a wider pool of workers. The importance of such flexible working systems also looms large in the face of digital transformation that calls for vocational (re)training of existing workers. Once employment conditions including wages are appropriately set, it is anticipated that there will be a significant demand for inclusively flexible work options among diverse workforce groups, such as, but not limited to child-rearing parents, seniors seeking post-retirement work, and those needing vocational (re)training. ■

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