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The 2018-2021 working
time reform in Korea:
A preliminary assessment

**Alexander Hijzen,
Stefan Thewissen**

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This paper was prepared in the context of the implementation of the OECD Jobs Strategy in member and partner countries, i.e. the process through which the OECD supports countries in their endeavour to promote good economic and labour market performance in a changing world of work by developing country-specific recommendations and action plans. The paper served as a background document for the Economic Survey of Korea. For more information on the implementation of the OECD Jobs Strategy, please visit:

<http://www.oecd.org/employment/jobs-strategy>.

Abstract

To reduce the incidence of very long working hours, Korea is gradually implementing a major working-time reform, which lowers the statutory limit on total weekly working hours from 68 to 52 between 2018-2021. This paper provides a preliminary assessment of the reform with three key insights. First, the ongoing reform will bring Korea's working time regulation in line with the dominant OECD practice. Second, the implementation of the 52-hour limit among large firms reduced the incidence of working more than 52 hours by 5 percentage points or about a fifth of its pre-reform level among employees working overtime. While these results are encouraging, they also suggest that working very long hours remains common, even among large firms that are subject to the new 52-hour limit. Third, two in five workers will remain exempt from the 52-hour limit once it is fully implemented in 2021. The main conclusion is that the reform represents an important step in the right direction, but that further efforts are needed to effectively change Korea's long working-hour culture.

Résumé

Pour réduire l'incidence des très longues heures de travail, la Corée met progressivement en œuvre une réforme majeure du temps de travail, qui abaisse la limite légale du nombre total d'heures de travail hebdomadaire de 68 à 52 entre 2018-2021. Ce document fournit une évaluation préliminaire de la réforme avec trois idées clés. Premièrement, la réforme en cours mettra la réglementation coréenne du temps de travail en conformité avec la pratique dominante de l'OCDE. Deuxièmement, la mise en œuvre de la limite de 52 heures dans les grandes entreprises a réduit l'incidence de plus de 52 heures de travail de 5 points de pourcentage, soit environ un cinquième de son niveau d'avant la réforme, parmi les employés effectuant des heures supplémentaires. Bien que ces résultats soient encourageants, ils suggèrent également que le travail de très longues heures reste courant, même parmi les grandes entreprises soumises à la nouvelle limite de 52 heures. Troisièmement, deux travailleurs sur cinq resteront exemptés de la limite de 52 heures une fois qu'elle sera pleinement mise en œuvre en 2021. La principale conclusion est que la réforme représente un pas important dans la bonne direction, mais que des efforts supplémentaires sont nécessaires pour changer efficacement le pratique répandu de travailler de très longues heures.

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The 2018-2021 working time reform in Korea: A preliminary assessment

Introduction

More than one in six workers in Korea work 55 or more hours per week – more than twice as much as on average across the OECD. As emphasised in the OECD Jobs Strategy, working such long hours impairs the quality of the work environment, with potentially adverse consequences for health, productivity and wellbeing (OECD, 2018^[1]). The incidence of very long working hours can also aggravate the challenges presented by population ageing, as it reduces the ability of workers to continue working in good health up to an older age. To decrease the incidence of working very long hours, the Korean government is currently introducing a major working time reform that will lower the statutory limit on weekly working hours from 68 to 52 during the period 2018-2021. The scope of the reform is initially limited to large firms and subsequently extended in a stepwise manner to smaller firm size groups.

This paper provides a preliminary assessment of the 2018-2021 working time reform in Korea. The assessment consists of two parts: i) an institutional component in which Korea's reformed working time regulation is placed in OECD context¹ and ii) an econometric component in which the effect of the first phase of the reform among large firms on the incidence of very long working hours is evaluated. Since the reform is still in progress, the econometric part of the assessment should be considered as preliminary. The assessment is conducted in the context of the implementation of the OECD Jobs Strategy, i.e. the process through which the OECD supports countries in their endeavour to promote good jobs for all in a changing world of work by developing country-specific recommendations and action plans.²

The remainder of this paper is structured as follows. Section 1 sets the scene by documenting the widespread practice of working very long hours in Korea relative to other OECD countries, describes among which workers and firms very long hours are most common and reviews the literature on the consequences for health, productivity and wellbeing. Section 2 provides the institutional and econometric assessment of the ongoing working time reform. While the evaluation suggests that the first phase of the reform has reduced the incidence of working very long hours, it also makes clear that additional efforts are needed. Section 3 puts forward a three-pronged approach to effectively change Korea's long working-hour culture: i) make the existing legislation more effective; ii) reduce incentives for firms to demand very long hours; and iii) reduce incentives for workers to supply very long hours. Section 4 concludes.

¹ The institutional analysis is based on a preliminary update of working hour legislations across OECD countries. A more systematic review is planned as part of the 2021 OECD Employment Outlook.

² This working paper is part of a series that document analytical work to support labour market chapters in the OECD Economic Surveys (OECD, 2020^[5]). For more information on the implementation of the OECD Jobs Strategy please visit: <http://www.oecd.org/employment/jobs-strategy>.

Box 1. Executive summary

Many Koreans work very long hours, with potentially important negative consequences for the quality of the work environment, health, productivity and wellbeing. The long working-hour culture can also aggravate the challenges presented by population ageing, as it reduces the ability of workers to continue working in good health up to an older age.

- In 2017, 18% of employees worked 55 hours or more per week – twice the OECD average. While working very long hours remains widespread, it has decreased markedly from 40% in 2000.
- Individuals with a weaker labour market position more frequently work very long hours. This includes older workers, workers with lower hourly wages and workers employed in small firms.
- The international evaluation literature suggests that the incidence of very long working hours may have contributed to the high rate of fatal work injuries and low productivity performance in Korea.

Korea is currently introducing a major working time reform aiming at reducing the incidence of very long working hours, by lowering the statutory limit on weekly working hours from 68 to 52. A preliminary assessment of the reform provides three key insights:

- The ongoing reform will bring Korea's working time regulation in line with the dominant OECD practice.
- The implementation of the first phase of the reform among large firms reduced the incidence of working more than 52 hours by 5 percentage points or about a fifth of its pre-reform level among employees working overtime. While these initial results are encouraging, they also suggest that the incidence of working very long hours remains high, even among large firms that are subject to the new working time regulation.
- More than two in five workers will remain exempt from the 52-hour limit once it is fully implemented in 2021.

The main conclusion is that the reform is an important step in the right direction, but that further efforts are needed to effectively change Korea's long working-hour culture:

- Increase the effectiveness of working time regulations. Enhance the enforcement of statutory working time limits and remove exemptions where possible.
- Reduce incentives for firms to demand long worker hours. Increase the flexibility of firms to adjust to changing business conditions by (1) increasing the reference period for hours averaging of the flexible working time system from three to six months and (2) making employment protection for permanent contracts more predictable. Promote high-performance management and work practices, including the use of rigorous evaluations based on performance rather than working long hours.
- Reduce incentives for workers to supply very long worker hours. Decrease the financial necessity to work such long hours by investing in skills, combating in-work poverty and improving pension coverage and adequacy.

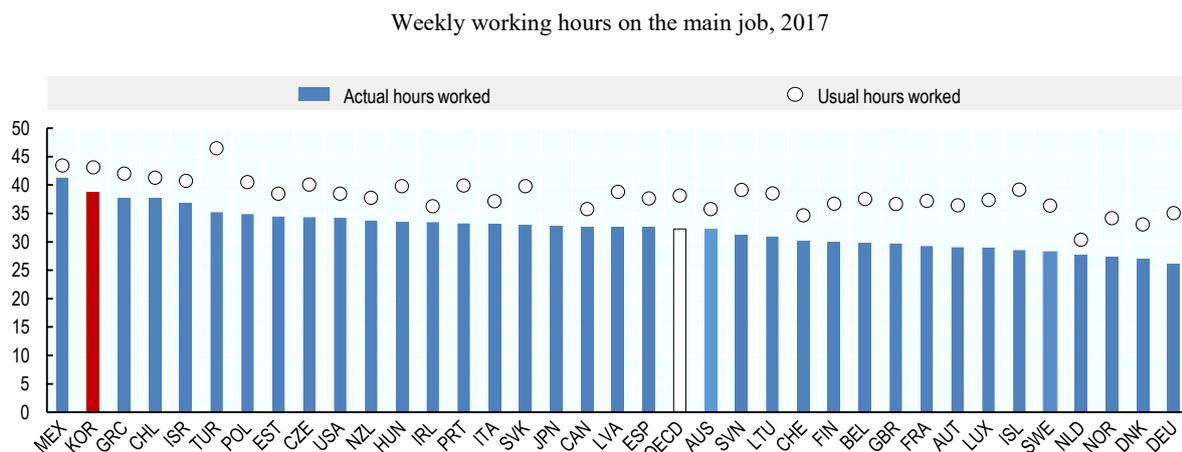
1. An OECD perspective on working time practices in Korea

This section documents the importance of working very long working hours in Korea with respect to other OECD countries before the 2018-2021 working time reform, and its evolution of time; describes among which workers and firms very long hours are most prevalent and reviews the international literature on the consequences of working very long hours for health, productivity and wellbeing.

1.1. Koreans work comparatively long hours

Koreans work on average very long weekly hours in international comparison (Figure 1). Actual working hours, which refer to hours worked in a given week and take account of work absences, are 20% above OECD average and the highest after Mexico.³ Usual working hours, which are the hours generally worked over a reference period excluding absences from work, are 13% above the OECD average, and are the highest across OECD countries after Turkey and Mexico. The difference between actual and usual working time in Korea is small compared with other OECD countries. This may be a consequence of the relatively limited legal entitlements for sickness and paid leave (OECD, 2020^[2]). Paid leave will be substantially expanded during 2020 and 2022 (Section 2.1 and Annex A1).

Figure 1. Koreans work on average among the longest hours in the OECD



³ *Actual working hours* refer to hours worked in a specific week and comprise the following four work components: i) productive time (hours actually worked including (unpaid) overtime); ii) time spent on ancillary activities at the place of work (e.g. preparation of tools and the workplace, repairs and maintenance, preparation of receipts and reports); iii) unproductive time spent in the course of the production process (e.g. time spent at the place of work waiting because of lack of supply of work); iv) resting time at the workplace. *Usual working hours* are the modal value of weekly actual working hours during a 4-week or 3-month reference period, excluding weeks when an absence from work occurs (e.g. regular, sickness or special leave and strikes). Since the present analysis focuses on *average* working hours among employed persons, the difference between actual and usual working hours largely reflects the role of absence from work, while idiosyncratic differences in actual working time cancel out.

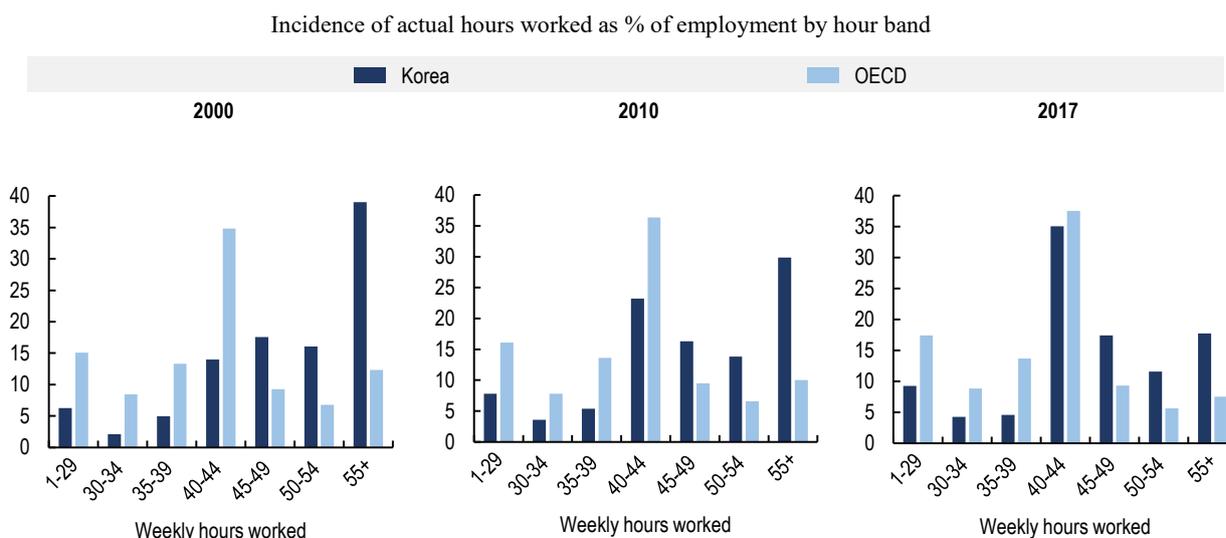
Note: Data refer to total employment aged 15 and above. Actual hours worked refer to all jobs and usual hours to the main job. Usual working hours are not available for JPN and refer to dependent employment for the USA. Actual hours worked data for TUR refer to 2015.

Source: OECD Employment Database and KLIPS for data on usual hours for Korea.

Long average working hours reflect a combination of a high incidence of very long working hours and a low incidence of part-time work. In 2017, about 18% of employees worked very long hours, defined in this section as working 55 or more actual hours per week (Figure 2).⁴ This is more than twice as high as the average across OECD countries. By contrast, the percentage of part-time workers, defined as working less than 30 hours per week, is relatively low: only 9% of employed persons in Korea compared with 17% on average across the OECD.

The percentage of individuals working very long hours has decreased markedly over time in Korea, but remains high (Figure 2). In 2000, almost 40% of Koreans worked 55 or more hours on a regular basis, while less than 15% worked between 40-44 hours. By 2017, the situation had almost reversed: 35% of Koreans worked between 40-44 hours, while about 18% worked 55 hours or more. As a result, the distribution of working time in Korea has become more comparable to the distribution on average across OECD countries.

Figure 2. Many Koreans work very long hours, though fewer than in the past



Note: Data refer to total employment aged 15 to 64. Actual hours worked refer to all jobs, except for CHL (actual hours in main job), AUS (usual hours) and the USA (dependent employment). Average for 32 OECD countries (except ISR, JPN, MEX and NZL).

Source: OECD Employment database, EULFS, HILDA for AUS, Labour Force Survey for CAN and TUR, CASEN for CHL, CPS for the USA.

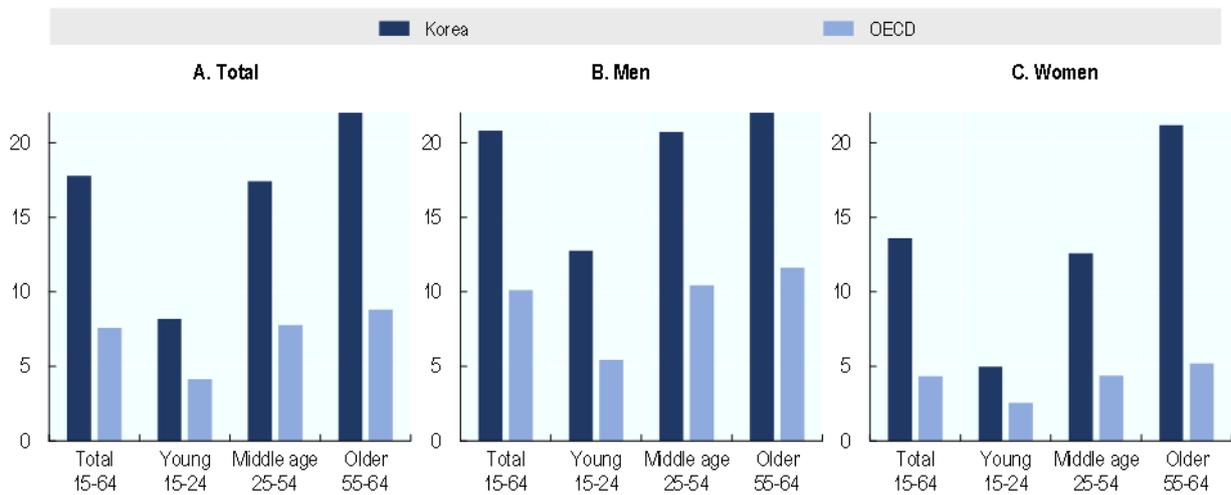
⁴ In the OECD Job Quality framework, very long working hours are defined as 60 hours or more (Cazes, Hijzen and Saint-Martin, 2015^[33]). This paper uses a 55-hour threshold for the international comparison as it is more relevant in the light of the Korean 2018-2021 reform. It is not possible to use the 52 limit since the OECD Employment Database reports hours in five-hour bands. For the evaluation of the reform in Section 2 that uses Korean micro data, working very long hours is defined as working more than 52 hours consistent with the statutory limit.

1.2. Individuals with a weaker labour market position more often work very long hours

Working very long hours is common in Korea across all age groups for both men and women (Figure 3). Older workers (aged 55-64) particularly often work very long hours. This may partly stem from a generation or cohort effect, in the form of evolving social norms about working long hours. However, very long hours for older workers also may reflect the mandatory retirement system based on a low retirement age and low income security for retirees, as evidenced by very high rates of poverty among elderly (Fernandez et al., 2020^[3]; OECD, 2018^[4]; OECD, 2020^[5]).

Figure 3. Working very long hours is particularly common among older workers

Incidence of working 55 or more weekly actual hours as % of employment, 2017



Note: Data refer to total employment aged 15-64. Actual hours worked refer to all jobs, except for CHL (actual hours in main job), AUS (usual hours) and the USA (dependent employment). Average for 32 OECD countries (except ISR, JPN, MEX and NZL).

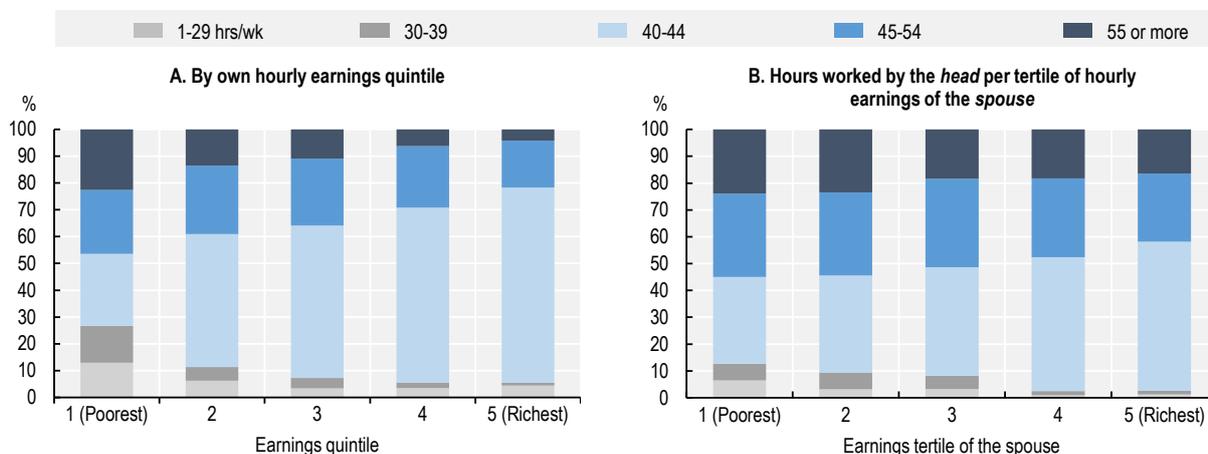
Source: OECD Employment database, EULFS, HILDA for AUS, Labour Force Survey for CAN and TUR, CASEN for CHL, CPS for the USA.

Very long working hours are concentrated among workers with low hourly wages (Figure 4 Panel A). In two-earner couples, household heads work longer hours if the hourly earnings of the spouse are lower (Figure 4 Panel B).⁵ These patterns suggest that workers supply long hours out of financial necessity in order to make a sufficient level of monthly individual and household earnings.

⁵ Figure 4 is based on KLIPS micro household survey data, which contain information on usual rather than actual hours worked. Figure 4 Panel B uses data for three years (2015-2017) because of the lower number of observations of two-earner households.

Figure 4. Workers with low hourly earnings work more often very long hours

Incidence of usual working hours by hour band across earnings quintile, 2017.

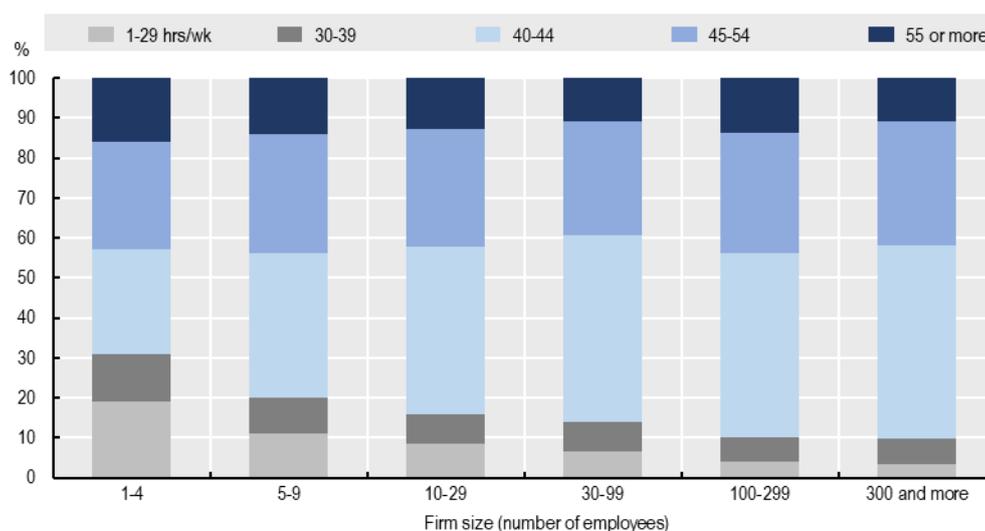


Note: Data refer to employees aged 18 and above (Panel A) and employees aged 18 and above in a two-earner household (Panel B). Usual hours include overtime and refer to the main job.
Source: KLIPS 2017 (Panels A) and 2015-17 (Panel B).

Working very long hours is common among employees across firms of all sizes (Figure 5). Among employees working fulltime, very long hours are particularly pervasive in very small firms with fewer than five employees. In 2017, 16% of employees and 37% of all workers worked in these small firms, which are highly overrepresented in low-productivity services. Job quality tends to be low, as exemplified by low earnings and labour market insecurity, in addition to the high prevalence of very long working hours (OECD, 2018^[6]).

Figure 5. Very long hours are particularly common in small firms

Incidence of actual working hours by hour band across firm size, 2017.



Note: Data refer to employees aged 18 and above. Actual hours refer to the main job.
Source: EAPS 2017.

1.3. Very long working hours compromise worker health, productivity and wellbeing

As emphasised in the Jobs Strategy, very long working hours impair the quality of the work environment, which is a key dimension through which work affects wellbeing (OECD, 2018^[1]). They increase the risk of work accidents, negatively affect worker health, and decrease hourly worker productivity, by increasing stress and fatigue while reducing the time available for recovery (Bassanini and Caroli, 2015^[7]; Saint-Martin, Inanc and Prinz, 2018^[8]).⁶ This suggests that the high rate of fatal work injuries and low productivity performance in Korea may be linked to the high incidence of very long working hours. Furthermore, a good quality work environment not only makes it more attractive for people to become or stay employed, but also makes work more sustainable by preventing the risk that people are forced to leave the labour force prematurely. Therefore, such very long hours can aggravate the challenges presented by population ageing by reducing the ability of workers to continue working in good health up to an older age (OECD, 2020^[5]).⁷

There is widespread evidence that very long working hours increase the risk of work accidents. According to a meta-analysis of the empirical literature on the effects of long working hours on workplace accidents, the risk of a workplace accident among persons working 12 hours a day is twice as high as among persons working 8 hours a day (Wagstaff and Lie, 2011^[9]). Workplace accidents are a major policy concern in Korea. The fatal workplace injury rate is the third highest across OECD countries and double the OECD average (Figure 6 Panel A).⁸ Its workplace injury rate is also more than twice that of countries coloured in green in the figure with a comparable level of economic development (measured in terms of GDP per capita).⁹

The risk of particular diseases and the development of less healthy lifestyles increases with very long working hours. Comprehensive meta-analyses show for example that working 55 hours or more a week instead of 35-40 hours is associated with a 30% increased risk of strokes or diabetes among manual workers (Kivimäki et al., 2015^[10]) and a 50% increase in the risk of depression in Asian countries (Virtanen et al., 2018^[11]). Moreover, fatigue and stress as a result of very long working hours also can result in less healthy lifestyle choices and can contribute to chronic diseases. For example, working 55 hours or more instead of 35-40 hours is associated with less physical activity, a higher prevalence of

⁶ Other factors affecting the quality of the work environment include job demands related to work intensity, working time flexibility and physical health risk factors, as well as job resources related to work autonomy, learning opportunities and workplace relationships (Cazes, Hijzen and Saint-Martin, 2015^[33]).

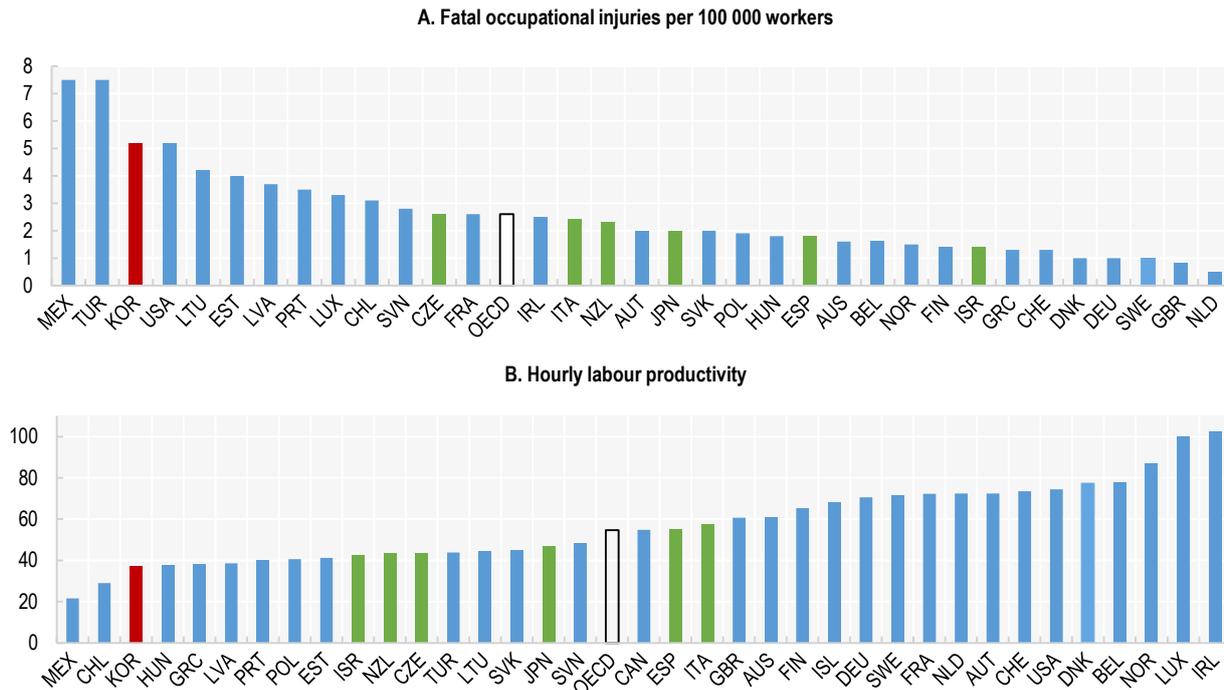
⁷ There is no evidence that lower statutory working time limits boost employment or lower unemployment (“work sharing”) (see amongst others (Andrews et al., 2015^[41]; Hunt, 1999^[36]) for Germany, (Zveglic and Van der Meulen Rodgers, 2003^[42]) for Taiwan, (Kawaguchi, Naito and Yokoyama, 2017^[43]) for Japan, (Sánchez, 2013^[44]) for Chile, (Crépon and Kramarz, 2002^[45]; Estevão and Sá, 2008^[37]) for France and (Skuterud, 2007^[38]) for Canada). Employment may not rise because worker’s earnings do not adjust in line with working hours, or because unemployed workers are not good substitutes for individuals working overtime (Oaxaca, 2014^[34]).

⁸ Almost 2,000 occupational fatalities and 90,000 occupational injuries and illnesses were recorded in 2017 in Korea (Ministry of Employment and Labor, Industrial Accident Statistics).

⁹ Czech Republic, Israel, Spain, New Zealand, Italy and Japan have a GDP per capita in current prices and PPPs close to that of Korea in 2018 (average GDP across these six countries is 2% higher than in Korea).

obesity, and a higher probability of smoking and the excessive use of alcohol (Kivimäki et al., 2017^[12]; Virtanen et al., 2015^[13]). The 2000-2002 reduction of the standard workweek from 39 to 35 hours in France reduced smoking among blue-collar workers and body mass index (BMI) among white-collar workers (Berniell and Bietenbeck, 2018^[14]).

Figure 6. Fatal occupational injuries are frequent and labour productivity is low



Note: Countries with a green bar have a comparable level of GDP per capita in current prices and PPPs. Panel A: Data refer to the latest year available (2015-2018; 2017 for Korea). The underlying national data source can differ (insurance records covering the insured are used for Korea). Panel B: GDP per hour worked in USD, current prices, current PPPs. Data refer to 2018 except for KOR, MEX, ISR and TUR (2017). Source: ILOSTAT Statistics on Safety and Health at Work and OECD Productivity Database.

Very long working hours can lower hourly worker productivity, resulting in decreasing returns to working hours. For instance, average handling time of Dutch call centre agents went up as their hours increased, as found in a study that exploited variation in working hours over time due to central scheduling (Collewet and Sauermann, 2017^[15]). Another study, using experimental data on munitions workers, found that output rises linearly with hours up to a threshold, but above this, output rises at a decreasing rate (Pencavel, 2014^[16]). With decreasing returns to working hours, reducing long hours tends to translate into less than proportional reductions in output and may even increase output if the increase in hourly labour productivity more than offsets the reduction in working time.¹⁰ Increasing

¹⁰ Employers may opt for working hours above the profit-maximising level because of the existence of labour market imperfections (Dolton, 2017^[35]). First, the health and wellbeing gains of working shorter hours might not be sufficiently taken into account, because managers tend to adopt a short-term perspective while the benefits of shorter hours materialise mainly in the longer term (OECD,

hourly labour productivity is a priority for Korea. It has the third lowest level across OECD countries, more than 30% below OECD average and 20% below that of countries with a comparable level of economic development (Figure 6 Panel B).¹¹

Very long working hours can also affect worker wellbeing. Very long working hours may reflect a worker's preferences of consumption over leisure and hence increase individual well-being. However, very long working hours also impair the quality of the work environment, and lead to job strain, lowering worker wellbeing. This may be more likely when very long working hours result from the pressure on workers – real or perceived – to distinguish themselves from their peers in order to gain management recognition or increase their chances for promotion in a context where individual productivity cannot be accurately observed by managers (Landers, Rebitzer and Taylor, 1996^[17]). Evidence from reforms in France and Portugal that reduced working time but kept monthly income unchanged, increased life satisfaction, principally due to better working conditions and increased leisure (Lepinteur, 2019^[18]). A reduction in the regular workweek in Japan that did not come with an hourly wage increase, improved life satisfaction among those workers most affected by the legislation (Hamermesh, Kawaguchi and Lee, 2017^[19]).

2. A preliminary assessment of the 2018-2021 working time reform

This section provides a preliminary assessment of the 2018-2021 working time reform in Korea. It provides a detailed description of the reform, positions Korea's regulation before and after reform in the OECD context and presents a preliminary econometric assessment of the effects of the first phase of the reform on the incidence of working very long hours in large firms.

2.1. The working time reform of 2018-2021

The current government has committed to reduce very long working hours in an effort to improve health and productivity by means of a major working time reform. The reform builds on a previous working time reform that reduced maximum *normal* working hours (when no overtime premium is payable or overtime conditions apply) from 44 to 40 between 2004 and 2011 (Box 2).

The main element of the reform is a decrease in the statutory limit of *total* weekly working hours (the sum of normal and *overtime* hours when an overtime premium or conditions are applicable) from 68 to 52. This element of the reform consists of a reduction in the statutory limit on weekly overtime hours from 28 to 12, whilst the limit on normal weekly working hours is kept at 40.¹² The reform is implemented in a staggered fashion by firm size during

2018^[30]). Second, since the productivity of individual workers cannot be accurately observed by managers, performance reviews and career progress may be partly based on working hours rather than productivity (Landers, Rebitzer and Taylor, 1996^[17]). Third, monopsony powers might induce employers to unilaterally set hours above the levels desired by workers.

¹¹ Productivity is particularly lagging in the services sector, which accounts for a large share of employment (OECD, 2020^[5]).

¹² The lower working time limit was implemented by means of introducing a legal definition of the workweek based on seven weekdays. This definition removed the ambiguity about the inclusion of the weekend in the definition of the workweek which allowed for more overtime hours (16 hours during the weekend; see Box 2), and effectively reduced the maximum weekly overtime hours from

the period 2018-2021 to give smaller firms more time to adjust. As of July 2018, the new legislative maximum applies to firms with 300 or more employees, with active enforcement as of March 2019. The reform has been extended to firms with 50 to 299 employees in January 2020, with active enforcement postponed until the end of the year. The 52-hour limit will be extended to firms with 5 to 49 employees in July 2021.¹³

In addition, the government reduced the number of sectors exempt from maximum overtime regulations from 26 to 5 as of July 2018. Sectors such as wholesale and retail, hotel and restaurant services, finance, broadcasting and social service now have to abide by the maximum overtime limit. Exemptions still apply to certain types of transportation services and healthcare. In these exempt sectors, employees are now entitled to 11 hours of uninterrupted rest per day,

Box 2. The 2004-2011 reform of the normal working week

Between 2004 and 2011, maximum normal weekly working hours in Korea were reduced from 44 to 40. The reform was motivated by the dual objective of tackling unemployment, which was high by Korean standards at the time following the 1997 economic crisis, and improving worker wellbeing. The hope was that reducing maximum normal working hours would lead to job creation, while at the same time reduce the percentage working very long hours.

A potentially unintended consequence of the reform was that it effectively increased maximum total weekly working hours by increasing the scope for overtime. The workweek, which lacked a clear legal definition, was widely interpreted as to exclude the weekend, allowing for an additional eight overtime hours per weekend day. The reduction from 44 to 40 normal hours meant the establishment of a two instead of one-day weekend based on the unchanged legal maximum of eight normal working hours per working day. Before 2004, workers were allowed to supply a total of 64 weekly hours: 44 normal and 12 overtime hours during the six-day workweek, and eight during the one-day weekend. The 2004-2011 reform increased maximum total weekly hours to 68: 40 normal hours and 12 overtime hours during the five-day workweek, and another 16 during a two-day weekend.

The reform contained a number of measures to ease any potential negative impacts on employers. First, the reform was gradually implemented by firm size between 2004 and 2011 to give smaller firms more time to adjust. Firms with fewer than five employees remained exempt from maximum working hour legislation and the need to pay an overtime premium. Second, the reform contained a transition period of three years during which the overtime premium was reduced temporarily from 50% to 25% for the first four hours of overtime (see Annex A1). Third, the reference period of the flexible working time system over which normal working hours can be averaged to stay below the statutory maximum and reduce overtime pay was extended from one to three months. Fourth, options for paid leave were reduced.

28 to 12. As maximum normal weekly working hours were kept at 40, this resulted in a reduction of maximum total weekly working hours from 68 to 52.

¹³ As a further compensation measure, firms with 5 to 29 employees can temporarily extend maximum overtime hours by an additional eight weekly hours until December 2022, conditional on a written agreement with an employee representative.

Furthermore, the government has increased the statutory minimum number of paid leave days, by obliging firms to provide paid leave during the public holidays (about 15 per year). With the agreement of the employee representative, firms may arrange for employees to take alternative days off *in lieu* of public holidays. This reform will again be implemented in a staggered fashion by firm size during the period 2020-2022, starting with firms with 300 or more employees in 2020 and including all firms with five or more employees from 2022 onwards.¹⁴ The reform will bring minimum entitlements to paid leave more in line with practices in other OECD countries (see Annex A1).

To compensate firms for the reduced scope for overtime work, the government promised to prepare measures by December 2022 to increase the scope for working time flexibility. While no major measures have been taken yet, the tripartite Social and Economic Council, an advisory body to the Korean President, reached an agreement to extend the reference period of the flexible working time system over which normal working hours can be averaged to stay below the statutory maximum and reduce overtime pay from three to six months. A reform bill based on the tripartite agreement is currently pending at the National Assembly.

2.2. Positioning Korea's working time regulation in OECD context

Korea's working hour legislation has become in line with dominant OECD practice as a result of the 2018-2021 working time limit reform.¹⁵

2.2.1. Working time limits have become more stringent

A first major instrument to prevent long working hours is setting regulatory limits on normal, overtime or total working hours. The main purpose of limiting normal working hours is to prevent persistently long working hours. Limits on overtime and total hours are meant to strike a balance between allowing employers to temporarily increase working hours beyond normal hour limits without having to make adjustments in the workforce, while preventing persistently long hours by setting limits and conditions for the use of overtime. Working time limits may be set by statutory law or by collective agreement.

The majority of OECD countries, including Korea, limit *normal* working time to 40 hours a week, based on a five-day working week and eight-hour working days (Figure 7 Panel A). Normal working hours in Korea were 44 before the 2004-2011 reduction in the normal workweek. Higher legislative limits are found in Mexico, Switzerland, Chile and Turkey, as well as in mainly English-speaking countries including Ireland and the United Kingdom. France has the lowest limit since the 1998-2002 Aubry reforms that introduced the 35-hour

¹⁴ In addition, as of 2018 employees are entitled to 11 days of paid annual leave in their first year of employment. Previously, employees were entitled to 1 day per full month worked, but leave was deducted from their entitlement in their second year of employment.

¹⁵ International comparisons of working time regulation should be drawn with caution for multiple reasons. First, there can be important variation across countries in the definition of working time, for example whether rest periods are included in normal working hours. Second, certain groups may be exempt from (parts of) working time regulation. Third, working time legislation may vary within a country by region, or by sector or occupation because of collective agreements. Fourth, conditions for overtime (or hours averaging) may apply, of which only the main elements are discussed in this note.

workweek. Australia and Belgium limit normal working time to 38 hours. Collectively agreed limits by social partners are typically lower or equal to limits set by statutory law.¹⁶

The large majority of OECD countries limit *overtime* hours that can be worked on a weekly basis, and about half the OECD countries have (additional) monthly or annual overtime (Figure 7 Panel B).¹⁷ In Korea, the 2018-2021 working time reform reduces weekly overtime limits from 28 to 12 hours (see Box 2). This brings overtime limits more in line with international practices. However, weekly overtime limits remain somewhat higher in Korea than in all other OECD countries where limits exist.¹⁸ Overtime limits do not exist in Australia, New Zealand and the USA, although in Australia overtime has to be “reasonable” based on a number of defined factors. Japan implemented monthly (45 hours) and annual (360 hours) overtime limits during 2019-2020. Most EU countries have a weekly overtime limit of eight hours. This reflects the combination of the EU Working Time Directive, which limits total weekly working hours to 48, and a normal 40-hour working week set at the national level.

The 52-hour limit on *total* weekly hours implemented with the 2018-2021 reform places Korea more in line with the limits in the other OECD countries (Figure 7, Panel C). The 52-hour limit is the lowest after Canada among non-European OECD member countries if monthly and annual limits are ignored. Maximum total weekly hours including such monthly and annual limits are lower in four non-European OECD countries (Japan, Canada, Turkey and Switzerland), but higher in Chile and Mexico, and no limits exist in Australia, New Zealand and the United States. Korea’s total hour limit remains higher than the 48-hour maximum in EU countries following the EU Working Time Directive, but the difference will be rather small (e.g., 4 hours).

2.2.2. Possibilities to average hours are somewhat below OECD average

Hours averaging (or time banking) is also an important legal instrument for limiting very long working hours. It allows firms to temporarily surpass weekly normal and total working hour limits without incurring additional overtime premium costs, provided that average working hours do not exceed the limit during a longer reference period. While hours averaging gives employers the flexibility to temporarily extend working hours in case of temporary or unforeseen needs without having to increase the workforce, it also increases the incidence of very long working hours during the reference period.¹⁹ The large majority

¹⁶ A few countries, including France, Germany and Italy, allow sectoral or firm-level agreements to overrule higher-level agreements or labour law under certain circumstances. Maximum working time provisions in collective agreements are not common in most non-European OECD countries including Korea, as well as in most Eastern European countries (Eurofound, 2017_[39]).

¹⁷ Monthly and annual limits that can considerably lower maximum overtime hours on a weekly basis (on average over the year). In the absence of weekly statutory overtime limits, the figure shows the implied overtime limits based on the difference in limits for total and normal working time. Collectively agreed overtime limits are rare and therefore ignored (Anxo and Karlsson, 2019_[40]).

¹⁸ Additional monthly or annual limits on overtime do not exist in Korea. The 12-hour overtime limit is two hours above OECD average if monthly and annual limits are ignored, and six hours above if such limits are taken into account.

¹⁹ The main difference between hours averaging and overtime work is that under hours averaging hours beyond the statutory limit for weekly working time are compensated by time off in the reference period whereas in the case of overtime this takes the form of an overtime premium.

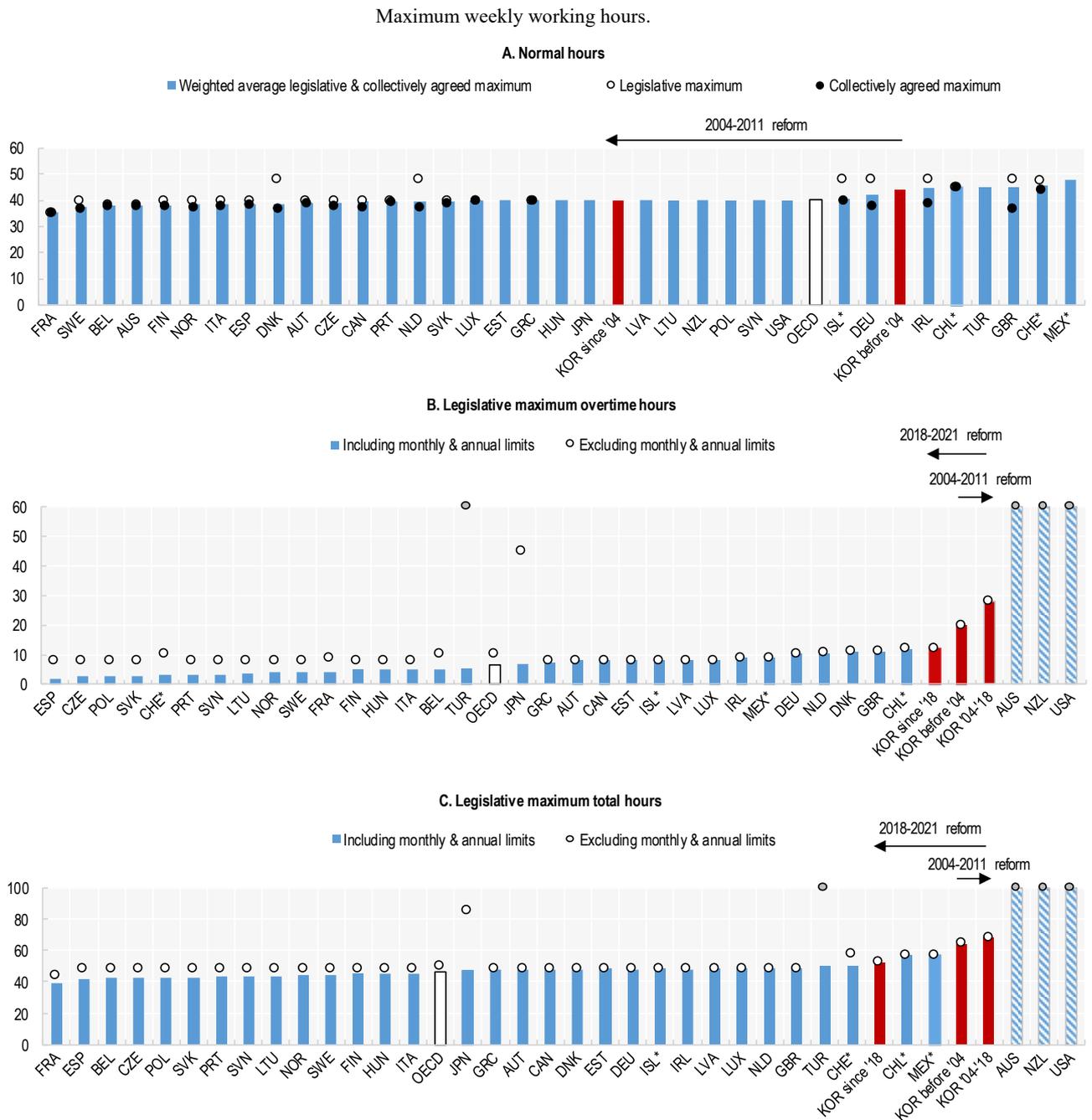
of OECD countries allow employers by statutory law or collective agreement to average working hours over a maximum reference period. There may be additional conditions, such as the maximum number of working hours in a given week or the need for an agreement with the worker or a worker representative body. As discussed in greater detail in Section 3.3, Korea's three-month maximum reference period for hours averaging is relatively short compared to other OECD countries.²⁰

2.2.3. The overtime premium level is close to OECD average

The *overtime premium* that firms have to pay to compensate employees for working hours beyond the limit for normal hours reduces incentives for the use of very long working hours. An overtime premium makes it more expensive for firms wishing to expand production to demand longer working hours from its staff, without completely closing the possibility of doing so as in the case of working time limits. An overtime premium also may increase incentives for workers to supply more hours in order to earn additional income. Korea holds an intermediate position with an overtime premium of 50%, just above the OECD average (see Annex A1).

²⁰ Korea has two hours averaging systems. In the text, the main hours averaging system is discussed (referred to as the “flexible working time system”). The second system consists of a much shorter reference period (two weeks) and lower maximum normal hours for each of these weeks (48 hours), but does not require a written agreement with an employment representative.

Figure 7. The stricter working time limits in Korea are in line with the dominant OECD practice



Note: Data refer to 2018, except for AUS, AUT, CAN, NZL (2019), JPN and USA (2020) and the countries with an asterisk (*), which refer to 2011-2012. In countries with only maximum total working hours (DNK, DEU, ISL, IRL, NLD, GBR), maximum overtime hours are calculated as maximum total hours minus common collectively agreed maximum normal working hours. Dashed bars and grey circles indicate unlimited or very high (TUR) maxima. OECD average excludes KOR, and in Panel B and C countries with unlimited working hours plus TUR. See detailed country-level information in Table 2 in Annex A2.

Source: OECD Working Time Questionnaire (2010), Eurofound (2019) and OECD & Visser ICTWSS (2019). See detailed country-level information in Table 2 in Annex A2.

2.3. A preliminary assessment of the effects of the reform

While it is too early to assess effects on worker health, productivity and wellbeing, a preliminary evaluation suggests that the working time limit reform so far has been effective in reducing the share of employees that work very long hours. Nevertheless, working more than 52 hours still is prevalent in firms that have to comply with the new regulation and the reform only applies so far to a relatively small part of the working population.

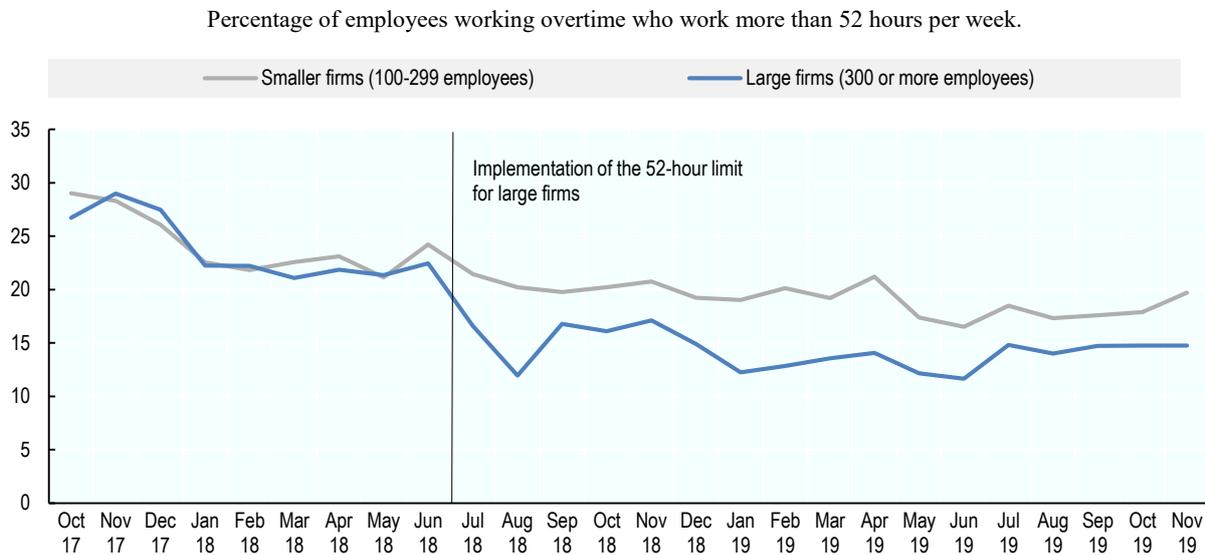
The preliminary evaluation of the reform takes advantage of the stepwise implementation of the reform by firm size, where the new 52-hour limit became binding as of July 2018 only to large firms (with 300 or more employees). The evaluation is based on a difference-in-difference design, which compares the change in the probability of working more than 52 hours following the reform between large firms (“treatment group”) and smaller firms with 100-299 employees (“control group”). Box 3 provides more information on the dataset and Annex A3 contains further results.

The share of employees working overtime who worked more than 52 hours per week plummeted by -26% in large firms (with 300 or more employees) during the month when these firms had to start complying with the new working hour limit (Figure 8, seasonally adjusted numbers).²¹ The share decreased by a more modest -11% in smaller firms (with 100-299 employees) to which the lower limit did not (yet) apply. Before the reform, the incidence of working very long hours was on a similar declining trend for the two firm size groups (-2.2% on average per month between October 2017-June 2018 and around -0.6% between July 2018 and the end of the observation period in November 2019).²²

²¹ The main analysis focuses on workers most likely to be affected by the reform: employees aged 18 and above working overtime (defined as those who report working more than 40 weekly hours) in private non-exempt sectors or occupations on a permanent contract aged 18 and older, referred to in the text as “employees working overtime” (see also Box 3).

²² Over a longer pre-reform period between January 2016 and June 2018, the share of individuals working more than 52 hours decreased by around -0.7% on average per month in both firm sizes.

Figure 8. Fewer employees work very long hours in large firms since the implementation of the 52-hour limit



Note: The sample covers employees working overtime in private non-exempt sectors or occupations on a permanent contract aged 18 and older in firms with 100 or more employees. Data refer to actual hours on the main job. Data are seasonally adjusted by regressing the probability to work more than 52 hours on a set of month dummies for data from January 2016 onwards.
Source: EAPS.

Box 3. Evaluating the effect of the 2018-2021 working time reform

Data and hours definition. The evaluation makes use of the Economically Active Population Survey (EAPS), which is Korea’s labour force survey consisting of micro-level cross-sectional monthly survey data. The database contains an indicator on actual hours worked during the reference week. It does not include information on usual hours worked, a breakdown in normal and overtime hours, whether an individual is fulltime employed or not, or his or her wage.

Sample. The sample for the main empirical specification is restricted to those who are most likely to be affected by the reform. This sample consists of a subset of employees working overtime in private non-exempt sectors or occupations on a permanent contract aged 18 and older, referred to in the text as “employees working overtime”. Working overtime is defined as those who report to have worked more than 40 hours in the reference week. This sample comprises 11% of all workers, and about 19% of all those working in the treatment and control group.

Regression model. The following equation is estimated:

$$y_{it} = \beta_0 + \beta_1 reform_t + \beta_2 treatment_{it} + \beta_3 reform_t \cdot treatment_{it} + \beta_4 X_{it} + \pi_t + \epsilon_{it}$$

The dependent variable y_{it} in the regressions is a dummy variable indicating whether the individual worked more than 52 actual hours in her or his main job. The dummy $reform$ indicates the implementation of the reform (1 as of July 2018) and the dummy $treatment$ indicates the treatment group. The main coefficient of interest β_3 shows the causal effect of the reform on the treatment group. The vector X_{it} includes a set of demographic control variables (gender, age, education, relation to household head, rural or urban and married or not) and 1-

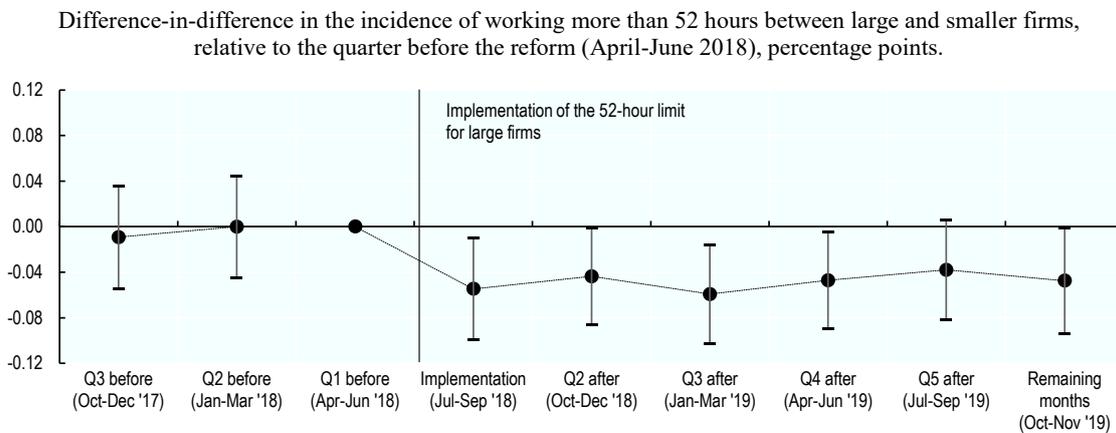
digit industry and occupation dummies. The vector π_t consists of month-year dummies to remove seasonality and nonlinear time trend. The regression model is estimated as a linear probability model with robust standard errors for simplicity of interpreting the interaction term (Karaca-Mandic, Norton and Dowd, 2012^[20]).

Causal interpretation. A major concern for a causal interpretation of the difference-in-difference is that the sample might be endogenous if the working time reform affects the decision of individuals to work overtime. The effects of the reform are still visible, albeit weaker and significant at the 5 percent level, if instead the sample is not restricted to those working overtime or is selected based on pre-reform predictors of long hours.

Annex A3 contains more information about the evaluation, including the main regression results, a discussion on whether firms with 100-299 employees provide the appropriate counterfactual to evaluate the effects of the reform (the parallel trend assumption), as well as additional sensitivity tests.

The results from the preliminary assessment indicate that the reform led to a decrease of about 5 percentage points in the share of employees working overtime who work more than 52 hours in large firms (Figure 9).²³ This implies that the reform has decreased the incidence of working more than 52 hours among this group by about a fifth, from a level of 23% in the quarter before the reform.

Figure 9. The reform had a direct and persistent effect on the incidence of very long hours in large firms



Note: See Figure 8 for the sample definition. Data refer to actual hours on the main job. Each point shows the difference in the difference in the incidence of working more than 52 hours between large (300 or more employees) firms and smaller firms (100-299 employees), relative to the quarter before the reform (April-June 2018) in percentage points. Vertical bands indicate the 95% confidence intervals of each point estimate. Source: EAPS.

While the first phase of the reform lowered the share of individuals working very long hours, it still remains substantial. First, even in large firms that have to comply with the new rules, 14% of employees working overtime still report working more than 52 weekly hours in 2019. Second, the first phase of the reform only covers 16% of all employees working overtime. In

²³ The 52-hour limit applies as of January 2020 to the control group. Anticipation effects will reduce the estimated effect of the reform for large firms in later periods in Figure 9.

the parts not (yet) covered, working more than 52 hours among employees working overtime is much more prevalent (22% in 2019).

It is not yet possible due to the lag in data availability to evaluate the effects of the reform on labour market outcomes such as employment and wages, worker safety and health, productivity and wellbeing.²⁴ Evaluations of the 2004-2011 reduction in the normal workweek generally report positive health and productivity outcomes, without significantly affecting monthly earnings and employment (Box 4). However, it has to be kept in mind that these findings do not necessarily fully generalise to the current 2018-2021 reform given differences in the nature of the reform. The current reform caps overtime rather than normal working hours. As a result, it mainly affects those working very long hours, which is a relatively small group but also one for which working hours are more likely to entail adverse health and productivity effects.

Box 4. Effects of the 2004-2011 working time reform on health and productivity

Evaluations of the 2004-2011 reduction in the normal workweek in Korea generally report positive health and productivity outcomes, but no effects on earnings and employment.

The reform reduced actual hours worked, but by less than the full reduction in the limit on normal working time (Park and Park, 2019^[21]; Kawaguchi, Lee and Hamermesh, 2013^[22]; Jeong Son, 2016^[23]; Ahn, 2016^[24]; Lee and Lee, 2016^[25]). As one would expect, the effects of the reform were concentrated among those working more than 44 hours before the reform, which were mostly male breadwinners (Lee, Kawaguchi and Hamermesh, 2012^[26]; Kawaguchi, Lee and Hamermesh, 2013^[22]; Jeong Son, 2016^[23]). There is no evidence that spouse labour supply increased to compensate for the loss in household income among household heads (Kawaguchi, Lee and Hamermesh, 2013^[22]).

The reform further was associated with increased hourly wages, suggesting that the reduction in working hours did not translate into a similar reduction in monthly earnings (Kawaguchi, Lee and Hamermesh, 2013^[22]; Hamermesh, Kawaguchi and Lee, 2017^[19]; Ahn, 2016^[24]). Despite the increase in labour costs, no significant effects on firm employment are found (Park and Park, 2019^[21]; Jeong Son, 2016^[23]).

The increase in labour costs was partially compensated by an increase in hourly labour productivity. Indeed, productivity per worker increased by 1.5% in manufacturing firms, suggesting that the reduction in working hours was more than offset by an increase in hourly labour productivity. This is likely to reflect improved management efficiency, reduced worker fatigue, or the adoption of more advanced technology (Park and Park, 2019^[21]).

The reform improved health outcomes, through positive effects on health behaviour and a reduction in work injuries. The reform led individuals to exercise more regularly, decreased the likelihood of smoking and did not affect the frequency of daily drinking (Ahn, 2016^[24]). The occupational injury rate went down substantially, with larger effects among small establishments or hazardous industries (Lee and Lee, 2016^[25]). Furthermore, life satisfaction for male workers as well as for their spouses improved (Kawaguchi, Lee and Hamermesh, 2013^[22]; Jeong Son, 2016^[23]; Hamermesh, Kawaguchi and Lee, 2017^[19]).

²⁴ Such an evaluation could consist of a similar difference-in-difference design, applied to information on hourly and monthly wages; labour cost and productivity per worker; employment size, hiring and firing rates; and (self-reported) health status, health behaviour or sickness leave.

3. Changing Korea's long working-hour culture further

While having more stringent working time limits is a significant step in the right direction, more is needed to effectively change Korea's long working-hour culture. This section puts forward a three-pronged approach to further reduce the incidence of very long hours: i) improve the effectiveness of existing legislation; ii) reduce incentives for firms to demand very long hours; and iii) reduce incentives for workers to supply very long hours.

3.1. Improve the effectiveness of working time legislation

The effectiveness of the existing working time legislation should be improved by expanding its coverage and enhancing its enforcement.

3.1.1. Expand the coverage of working time legislation by removing exemptions where possible

About two in five workers will not be protected against the risk of very long working hours once the new working time regulation will be fully implemented in 2021, because of exemptions by labour market status, firm size or sector.²⁵ However, the incidence of working very long hours is particularly high in these exempt parts of the economy (Table 1).²⁶ While some exemptions are unavoidable, there is considerable scope to increase the effectiveness of the reforms by removing unwarranted exemptions.

Self-employed, (unpaid) family workers and workers in firms with fewer than five employees will continue to be exempt from the Labour Standards Act, including its provisions on working time limits. While the exclusion of self-employed and family workers to the application of the Labour Code is common across OECD countries given the difficulties of enforcing legislation, the justification for excluding small firms from the Labour Code is unclear and stands in sharp contrast to the dominant OECD practice.²⁷

Certain sectors are exempt from the specific provision on maximum weekly total working hours in the Labour Standards Act. The current reform makes an important step in the right direction by reducing the number of sectors exempt from the legislative maxima from 26 to five as of July 2018 (Box 2). However, exemptions for certain types of transportation services and healthcare will be kept.²⁸ While this may reflect the need for hours flexibility in these sectors, there are other and potentially more effective ways of achieving this, while limiting the risk of persistently working very long hours (e.g. hours averaging).

²⁵ Exemptions by occupation relate to farmers and fishermen; surveillance and intermittent workers, such as security guards; and (highly ranked) managerial and supervisory workers. These exemptions are ignored here, as they cover a relatively small part of the workforce and are quite common in other countries as well.

²⁶ This analysis is based on KLIPS data, which has a more granular sectoral coding than the EAPS. KLIPS measures hours worked on a usual rather than actual basis. Because of the coarse sectoral coding in the EAPS, it is not possible to evaluate the effect of the reduction in the number of sectors exempt from the working time limits from 26 to five as of July 2018.

²⁷ Workers in these small firms are only covered by a less protective Labour Standard Presidential Decree.

²⁸ The government has implemented a regulation requiring that employees in exempt sectors are entitled to 11 hours of uninterrupted rest per day (see Section 2.1).

Table 1. Working very long hours is particularly prevalent in exempt parts of the economy

		Employment share (%)	Share working more than 52 hours (%)
Self-employed		19	38.4
Unpaid family workers		4	29.5
Exempt by firm size		12	20.6
Employees	Exempt by sector, exemptions will remain in place	7	13.8
	Exempt by sector, exemptions will be removed	6	19.4
	Covered by working time limits	51	11.9

Note: Data refer to total employment aged 18 and above. Usual hours include overtime and refer to the main job. Exempt sectors (reformed) refer to sectors that are no longer exempt to maximum working hours legislation since July 2018 (Box 2) but were still exempt in the year that the data refer to (2017): Finance and insurance, Creative and Arts Related Services, Accommodation and food, Personal Care Services, Other Personal Service Activities n.e.c). Exempt sectors (not reformed) refer to sectors that are still exempt to maximum working hours legislation: Transportation and storage; Hospital Activities, Medical and Dental Practice Activities, Public Health Centers, Other Human Health Activities.

Source: KLIPS 2017.

3.1.2. Enhance the enforcement of labour market regulation

Korea should increase its efforts to improve the enforcement of its labour legislation, including that with respect to working time, by increasing the number of labour inspectors and enhancing their skills. Compliance with labour legislation is weak. For instance, about half the hours eligible to an overtime premium were unpaid in 2016. About 10% of the employees in 2016-2017 were paid below the minimum wage (Choi, 2018^[27]). Around 40% of all wage workers in Korea engage in some form of informal work, defined as work that is not fully covered by minimum wage regulation, labour standards and social insurance. The current government plans to increase the number of inspectors in order to reduce the number of workers per inspector from around 20,000 to 13,500, closer to the norm for developed countries of 10,000 (OECD, 2019^[28]).

3.2. Reduce incentives for firms to demand very long working hours

Incentives for the use of very long hours by employers can be reduced by increasing hours flexibility while avoiding very long hours on a persistent basis, and by increasing flexibility on other margins of adjustment such as employment. Furthermore, a cultural shift away from appreciating very long hours towards valuing efficient output should be provoked.

3.2.1. The scope for hours averaging can be extended to six months

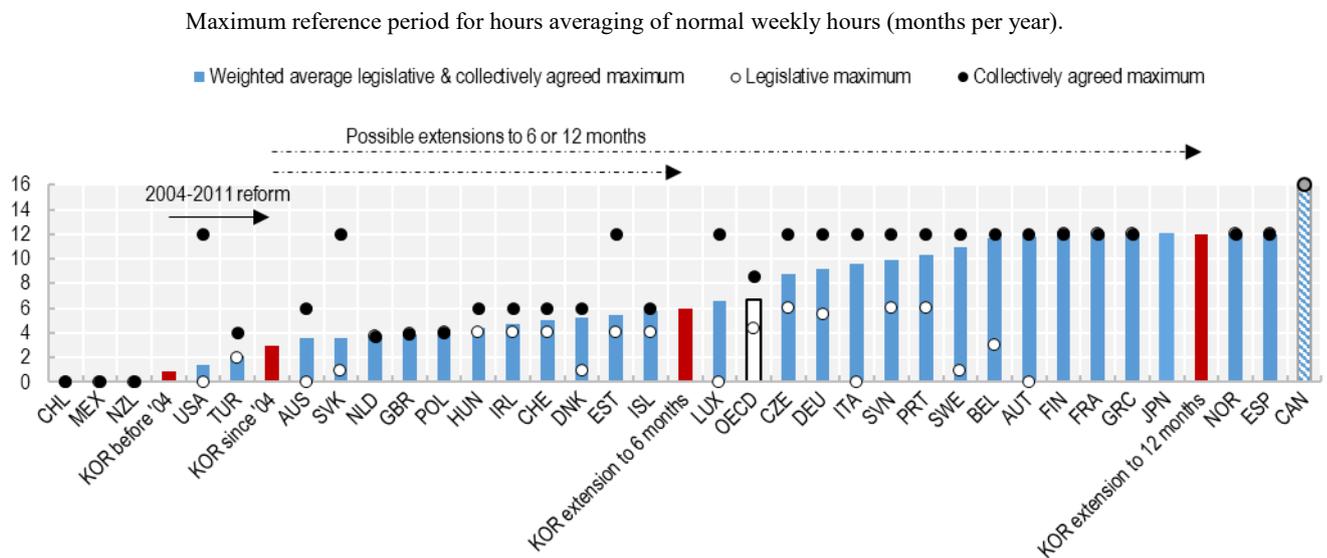
The reference period for hours averaging of Korea's flexible working time system can be extended from three to six months. A six-month reference period may help to reduce possible negative effects of the 52-hour limit on labour costs and will give employers more flexibility to adjust working hours to changing business conditions. The current three-month reference period is relatively short in international perspective, and an extension to six months as proposed by the tripartite Social and Economic Council would bring Korea close to the OECD average (Figure 10, Box 2).

However, an extension of the reference period exposes workers to potentially longer periods of working very long hours. It should therefore come with complementary measures such as the 11-hour uninterrupted daily rest period as proposed by the Social and Economic Council. Such measures are particularly important in Korea given that conditions for hours averaging are currently not very strict. Employers are allowed to average a substantial number of hours (12

on a weekly basis). With a six-month hours averaging period, this means that workers can be asked to work 64 total hours per week for a period of three months, if followed by three months of 40 hours per week. Moreover, the same hours averaging conditions apply to all workers, whereas in some countries, such as the USA and the Netherlands, more stringent conditions apply to workers with lower incomes and less control over their working and rest periods.²⁹

There is no clear need to further extend the reference period to 12 months as employers have called for. A 12-month extension would be comparatively long in OECD context (Figure 10). The substantial scope for overtime (due to a relatively high overtime hour limit) at relatively limited costs (due to a relatively low overtime premium) further reduces the need.³⁰

Figure 10. A 12-month hours averaging reference period would be long in international comparison



Note: Data refer to 2010 except for Korea since '04 (2019). OECD average excludes KOR and CAN where the maximum reference period is unlimited in case of a collective agreement. See detailed country-level information in Table 3 in Annex A2. Dashed bars and grey circles indicate the inexistence of a legislative limit. Source: OECD Working Time Questionnaire (2010) and OECD & Visser ICTWSS (2019). See detailed country-level information in Table 3 in Annex A2.

3.2.2. Make employment protection for permanent contracts more predictable

Korea’s employment protection for permanent contracts should be made more predictable, to make it more attractive for firms to deal with business fluctuations by adjusting employment levels rather than adjusting hours from existing staff. Moreover, a large difference in protection exists in Korea between permanent and temporary contracts, with further exemptions for very small firms where very long working hours are more prevalent.

²⁹ In case of urgent business needs, Korea has a second hours averaging regime that can be invoked unilaterally by the employer as long as the extension does not violate the individual employment contract.

³⁰ Countries where working hour limits are absent or high tend to have shorter or no possibilities of hours averaging. The correlation between the hours averaging reference period and the maximum total working hours taking into consideration monthly and annual limits is -0.7.

Better balancing employment protection legislation across contract types and removing exemptions by firm size would increase incentives for firms to hire on permanent contracts and lower incentives to stay small to circumvent strict employment protection.

3.2.3. Promote a cultural shift from being at work to being well and productive at work

More generally, the long-hours business culture should be combated by provoking a cultural shift in companies towards valuing efficient output rather than hours in the office. The use of more rigorous performance management systems and High-Performance Work Practices (HPWPs) that emphasise the importance of good working conditions for high productivity and profitability for firms should be promoted (OECD, 2018^[1]). While instruments available to government may be limited to provoke a cultural shift, leading-by-doing practices in government as well as disseminating information showing that very long hours are not necessary and may even run counter to high-quality work may help (OECD, 2019^[28]).

3.3. Reduce incentives for workers to supply very long hours

A significant part of the population works very long hours out of financial necessity. Investing in skills to improve low hourly productivity, increasing hourly wages to combat in-work poverty and improving pension coverage and benefit levels can mitigate worker needs to supply very long hours.

3.3.1. Invest in skills

Workers should have the possibilities to participate in lifelong learning to improve their earnings capacity and reduce the need to work very long hours.³¹ A particular policy priority is to invest in skills of workers in small and medium-sized enterprises (SMEs) and older workers, given their high share of very long working hours and low training participation rates. Korea has the second highest training gap across firm sizes in the OECD, with participation rates of only 30% of workers in firms with 10 or fewer employees compared to about 70% in firms with more than 250 employees. Gaps between older and younger workers in average skill levels and training participation rates are among the highest across the OECD as well. A successful skills strategy targeted at workers in SMEs and older workers should consist of reducing time-related and financial barriers to training, as well as improving career guidance (OECD, 2020^[29]).

3.3.2. Combat in-work poverty

In-work poverty should be actively combated by ensuring that work pays for all, including for the most vulnerable. The current government has taken important steps in this regard. It increased the minimum wage by nearly 30% between 2018 and 2019 to around 60% of the median wage, around 10 percentage points above the average of OECD countries with a minimum wage.³² While these substantial hourly wage increases lower the need for long

³¹ The working time reduction may also help free up time for training. A lack of time was cited by almost two in three workers in SMEs as a key barrier why they did not participate in any work-related training while wanting to. It is therefore important to monitor the impact of the 52-hour limit on workers and firms' skill investments (OECD, 2020^[29]).

³² The minimum wage hike for 2020 has been set at 2.9%.

working hours, potential negative effects on standard employment, (false) self-employment and informality that can come with a higher risk of very long hours should be closely monitored (OECD, 2018_[30]). Eligibility to the earned income tax credit (EITC) has been expanded considerably in 2019, although benefit levels remain relatively low (OECD, 2019_[28]). More can be done to target the EITC to own-account and non-regular workers among which working very long hours is common. While self-employed are in principle eligible to EITC since 2015, entitlement and benefit levels depend on business income adjustment rates that can be high and vary widely across sectors. Generally, phase-out is at low income levels and benefit levels are low for self-employed (OECD, 2018_[6]).

3.3.3. *Improve pension coverage and benefit levels*

Many older workers have to work very long hours out of financial necessity because of low pension coverage and/or low benefit levels. Low pensions partly reflect a short contribution period because of the late introduction of the National Pension System. Coverage is particularly low among non-regular workers (36% compared with 83% for regular workers in 2016) (OECD, 2018_[6]). Financial needs of pensioners should be eased by increasing further the tax-financed basic pension, and by targeting it better to elderly in absolute poverty. A problem that deserves particular attention is the practice of “honorary retirement” where older workers are forced to retire from their career jobs. These workers can often only access low-quality jobs with long hours. Incentives for firms to retain older workers should be strengthened by increasing or banning altogether the minimum mandatory retirement age. Moving away from the dominant seniority-based wage system that reward job tenure and age over any other factor, driving a wedge between productivity and wages that increases with worker age, would help in this regard as well (OECD, 2018_[4]).

4. Conclusions

Korea is currently introducing a major working time reform to reduce the incidence of very long working hours. The reform principally consists of lowering the statutory limit of total weekly working hours from 68 to 52. The reform is broadly consistent with the recommendations of the OECD Jobs Strategy (OECD, 2018_[1]), which emphasises the negative consequences of working very long hours for the quality of the work environment, and ultimately, worker wellbeing. Improving the quality of the work environment also can help to address the challenge of population ageing by enhancing the sustainability of work and allowing workers to stay in the labour force up to an older age.

This paper provides a preliminary assessment of the ongoing working time reform. It provides three key insights. First, a comparison of Korea’s working time regulations during the 2004-2021 with other OECD countries shows that the latest reform brings the Korean working time regulation in line with the dominant OECD practice, thereby completing a process of reform that was started in 2004. Second, a preliminary quantitative assessment indicates that the first phase of the reform reduced the incidence of working 52 hours or more by 5 percentage point or about a fifth of its pre-reform level among employees working overtime in large firms. While these initial results are encouraging, they also suggest that the incidence of working very long hours remains high, even among large firms subject to the new working time regulation. Third, about two in five workers will remain exempt from the 52-hour limit, even once it is fully implemented.

The main conclusion is that the ongoing working time reform represents an important step in the right direction, but also that further efforts are needed to effectively change Korea's long working-hour culture. This requires a three-pronged approach:

1. *Increasing the effectiveness of working time regulations*, by enhancing its enforcement and removing exemptions where possible.
2. *Reducing incentives for firms to demand very long working hours*. The flexibility of firms to adjust to changing business conditions can be improved, by increasing the scope for hours averaging of its flexible working time system and making employment protection rules for permanent contracts more predictable. A cultural shift away from very long office hours is also needed. This requires a greater emphasis on high-performance management and work practices, including the use of rigorous performance evaluations based on performance rather than working long hours.
3. *Reducing incentives for workers to supply very long working hours*. This includes measures that reduce the financial necessity for workers to supply very long hours by investing in their skills, combating in-work poverty and improving pension coverage and adequacy.

While the Korean working time reform has the potential to improve worker safety, health, productivity and wellbeing, it is too early to tell whether and to what extent these positive effects will materialise. It therefore remains important to evaluate the labour market consequences of the reform over the next few years.

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Annex A1. Paid leave entitlements and overtime premium in international perspective

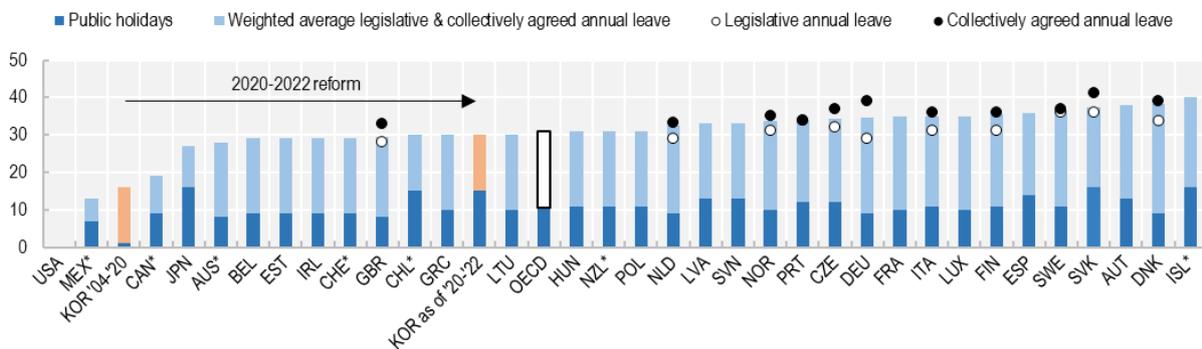
This Annex places Korean legislation related to paid leave entitlements and overtime premium in an OECD context.

A1.1 Paid leave

As discussed in Section 2.1, the government has increased the statutory minimum number of paid leave days, by obliging firms to provide paid leave during the 15 public holidays. This reform will be implemented in a staggered fashion by firm size during the period 2020-2022, starting with firms with 300 or more employees in 2020 and including all firms with five or more employees from 2022 onwards. Before the 2020-2022 reform, Koreans were entitled to only 16 days of paid leave, consisting of 15 days of annual leave to be taken at the choice of the employee with the exact timing in agreement with the employer, and one day of paid leave during a nationally defined public holiday. With the reform, minimum entitlements to total paid leave (annual leave and public holidays) in Korea become more in line with statutory or collectively agreed practices in other OECD countries (Figure 11).

Figure 11. Paid leave entitlements will become more in line with OECD practices

Minimum entitlement to days of annual leave at the choice of the employee and public holidays per year.



Note: Data refer to 2018, except for JPN (2019-2020), USA (2020), and the countries with an asterisk (*), which refer to 2011-2012. OECD average excludes KOR. USA do not have a federal or state statutory provisions establishing an entitlement to annual leave or public holidays for private employees. Information for ISR and TUR is missing. The situation refers to someone in second year of tenure. See detailed country-level information in Table 4 in Annex A2.

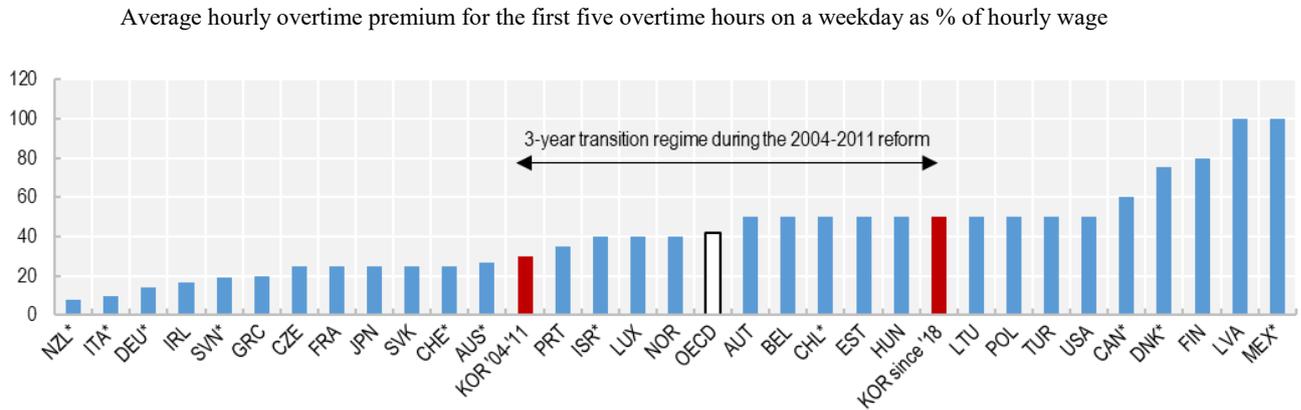
Source: Eurofound (2019), ILO TRAVAIL Legal Database (2011-2012) and OECD & Visser ICTWSS (2019). See detailed country-level information in Table 4 in Annex A2.

A1.2 Overtime premium

As mentioned in Section 2.3, Korea holds an intermediate position with an overtime premium of 50% for the first five hours of overtime work, just above the OECD average (Figure 12). During the 2004-2011 working time reform, the overtime premium was reduced temporarily from 50% to 25% for the first four hours of overtime during a three-year transition period.

Most OECD countries for which data are available define a minimum overtime premium in statutory law or collective agreements. Such provisions may contain further conditions, such as whether and on what grounds an employee may refuse to supply overtime hours.

Figure 12. The overtime premium in Korea corresponds to that of the typical OECD country



Note: Data refer to legislative minimum overtime premiums, except when overtime premiums are defined not in law but in collective agreements, in which case these are used multiplied by the collective bargaining coverage rate (AUS, DNK, DEU, IRL, NZL, SVN). Data refer to 2018, except for USA (2020) and the countries with an asterisk (*), which refer to 2010-2012. Overtime premia in the NLD, SWE and the GBR are set in collective agreements, but information on common rates is not available. Information on overtime premium regulation for ESP and ISL is missing. OECD average excludes KOR. Countries generally also allow for compensatory time off. Overtime premiums may be different for weekend work and night shifts. Data on common overtime premiums in collective agreements are used if overtime premiums are set in collective agreements. There may be overtime premium top-ups in collective agreements in countries with legislative overtime premiums, which are not captured in the figure. See detailed country-level information in Table 5 in Annex A2.

Source: OECD Working Time Questionnaire (2010) and Eurofound (2018). See detailed country-level information in Table 5 in Annex A2.

Annex A2. Detailed country-level information on working time regulation

This Annex provides country-level information on working time regulation related to working time limits (Table 2), hours averaging (Table 3), paid leave (Table 4) and overtime premium (Table 5).

Table 2. Country-level information on working time limits (Figure 7)

	Note	Data source
AUS	Normal hours: Collectively agreed working hours shown are an unweighted average across regions (data from 2010). Overtime: An employer can request that an employee works reasonable overtime. Overtime can be reasonable so long as various factors are taken into account, including workers' health and safety, family responsibilities, business requirements, adequacy of notice and overtime remuneration. An employee can refuse to work overtime, if the request is unreasonable.	Government sources. OECD Working Time Questionnaire (2010)
AUT	Overtime: As of September 2018, max 20 hrs/wk. An obligation to work overtime exists only if the performance of overtime is specified in the individual employment contract or collective agreement, if no objectively stronger interests to the contrary exist on the employee's side and if there is either an increased demand for labour or preparatory and shutting-down tasks to be fulfilled. Total hours: max 12 hrs/day, 60 hrs/wk, and 48 hrs/wk over 17 week-period.	Eurofound (2019) website
BEL	Overtime: max 78 hrs/4 months (up to 143 in collective agreements). Total hours: max 11 hrs/day and 50 hrs/wk.	Eurofound (2019); Government sources
CAN	Normal hours: max 40 hrs/wk in a federally regulated industry. Collectively agreed working hours shown are an unweighted average across regions (data from 2010). Overtime: Provinces can set higher levels at which point overtime pay is due. Certain occupations, including managers, architects, dentists, engineers, lawyers and medical doctors are exempt from overtime pay. Several industries exempt or set different standards for groups employees. Total hours: max 48 hrs/wk. Employer may be allowed to ask extra hours over a limited period under exceptional circumstances, if granted by Minister of Labour.	Government sources; OECD Working Time Questionnaire (2010)
CHL	Normal hours: max 45 hrs/wk, does not apply to workers who have more than one employer; managers, administrators and all individuals who work without direct supervision; domestic workers and other professions in which work is performed outside the workplace. Overtime: 2 hrs/day allowed in tasks which by their nature do not affect the worker's health, with a reference period of 5 or 6 days/wk. Domestic workers living outside the household may work up to 12 hrs/day. Domestic workers living in the household have no explicit limit.	ILO TRAVAIL (2011); OECD Working Time Questionnaire (2010)
CZE	Overtime: 8 hrs/wk over 26 weeks (52 weeks by collective agreement), 150 hrs/yr.	Eurofound (2019); Eurofound (2018)
DNK	Overtime: No legal limits, but limits may exist in collective agreements.	Eurofound (2019); Eurofound (2018)
EST	Normal hours: Collective bargaining is not important. Total hours: Individual workers may opt out of the max 48 hrs/wk.	Eurofound (2019); Eurofound (2018)
FIN	Overtime: max 138 hrs/4 mths, 250hrs/yr	Eurofound (2019); Eurofound (2018)
FRA	Overtime: max 220 hrs/yr (sectoral or company agreements may extend within certain limits). Total hours: max 12/day, 48 hrs/wk, and 44 hrs/wk over 12 consecutive weeks (46 hrs/wk by sectoral/company collective agreement or after authorisation of the Labour Inspectorate).	Eurofound (2019); Eurofound (2018)
DEU	Total hours: max 60 hr/wk.	Eurofound (2019); Eurofound (2018)
GRC	Overtime: Work between 41-45 hrs/wk is not taken into account in the limits specified for permissible overtime (but is paid at 20% premium). Above that, "overtime" is limited to 2 hrs/day and 120 hrs/yr.	Eurofound (2019); government information
HUN	Normal hours: Collective bargaining is not important. Overtime: max 250 hrs/yr (300 by collective agreement).	Eurofound (2019); Eurofound (2018)
ISL	Normal hours: Legislative maximum only exists for total hours.	ILO TRAVAIL (2011); OECD Working Time Questionnaire (2010)
IRL		Eurofound (2019); Eurofound (2018)
ISR	No information available.	

ITA	Overtime: max 250 hrs/yr.	Eurofound (2019); Eurofound (2018)
JPN	Normal, overtime and total hours: White-collar workers (product developers, financial traders, bankers, consultants and researchers) with annual incomes of more than 10.75 million yen (about 100,000 US\$) are exempt from hour legislation unless they give up the exemption status, as of 2019 for large employers (>50 employees) and as of 2020 for small firms. Overtime hours: 45 hrs/mth and 360 hrs/yr (does not apply to the exempt group). Employees can work up to 100 hrs/mth and 720 hrs/yr if signed an agreement with their workers.	Government sources
KOR		Government sources
LVA	Normal hours: Collective bargaining not important. Overtime: max 8 hrs/wk during a 4-month period.	Eurofound (2019); Eurofound (2018)
LTU	Normal hours: Collective bargaining not important. Overtime: max 8 hrs/wk, unless an employee gives written consent to work up to 12 hrs/wk, and maximum 180 hrs/yr unless longer term (collective agreements can extend this).	Eurofound (2019); Eurofound (2018)
LUX		Eurofound (2019); Eurofound (2018)
MEX	Normal hours: max. 48hrs/wk because of 8 hrs/day and 1 day minimum weekly rest. Overtime: general limit is 3 hrs/day not more than 3x per week.	ILO TRAVAIL (2011)
NLD	Overtime: Not defined in legislation. Most collective agreements contain provisions on overtime, granting employees extra pay for overtime, and setting limits. Total hours: max 60 hrs/wk.	Eurofound (2019); Eurofound (2018)
NZL	Normal hours: 40 hrs/wk unless the employer and employee agree otherwise. However, employers are not obligated to pay more per hour for overtime. Overtime: An employee can refuse overtime if an employment agreement does not have a valid availability clause that provides reasonable compensation.	Government sources
NOR	Overtime: max 10 hrs/wk, 25 hrs/4 wks, 200 hrs/yr	Eurofound (2019); Eurofound (2018)
POL	Normal hours: Collective bargaining not important. Overtime: max 150 hrs/yr (can be lowered by collective agreement, additional work regulation or individual contract).	Eurofound (2019); Eurofound (2018)
PRT	Overtime: max 2 hrs/dy, 150-175 hrs/yr (depending on firm size, unweighted average of 162.5 is shown in the figure. Up to 200 by collective agreement).	Eurofound (2019); Eurofound (2018)
SVK	Overtime: 150 hrs/yr (250 in healthcare), or 400 hrs/yr with agreement with the employee.	Eurofound (2019); Eurofound (2018)
SVN	Normal hours: Collective bargaining not important. Overtime: max 8 hrs/wk, 20 hrs/mth, 170 hrs/yr (230 only with worker's consent). Total hours: 10 hrs/day.	Eurofound (2019); Eurofound (2018)
ESP	Normal hours: Collective agreements specify hours per year. Overtime: max 80 hrs/yr.	Eurofound (2019); Eurofound (2018)
SWE	Overtime: max 50 hrs/mth and 200 hrs/yr.	Eurofound (2019); Eurofound (2018)
CHE	Normal hours: max 45/wk for industrial enterprises, offices and technical posts and sales staff in large commercial enterprises and 50/wk for all other workers (unweighted average of 47.5 is shown in the figure). Overtime: max 2hrs/day (interpreted in the figure for 5 days/wk), unless it is a holiday or in case of necessity. Limit of 170 hrs/yr for those with 45 normal hrs/wk limit; 140 hrs/yr for those with 50 normal hrs/wk limit (unweighted average of 155 hrs/wk is shown in the figure). Total hours: max may be exceeded in case of urgency; establishment of inventory, of accounts or of liquidation; prevention or repair of disturbances if no other means can be expected from the employer.	ILO TRAVAIL (2012), OECD Working Time Questionnaire (2010)
TUR	Normal hours: max 11 hrs/day. Overtime: max 270 hrs/yr.	Anxo & Karlsson (2019)
GBR	Normal, overtime and total hours: Individual workers may opt out of the 48-hour total working week. Overtime: Health and safety legislation may regulate overtime in certain industries. Collective agreements, which are most commonly undertaken at the company or establishment level, rarely regulate overtime.	Eurofound (2019); Eurofound (2018)
USA	Normal hours and overtime: Unless specifically exempt, employees covered by the Act must receive overtime pay above 40 hrs/wk at at least 1.5x their regular pay rates. Principal group exempt from overtime pay requirements are employees in a "bona fide executive, administrative, or professional capacity". This entails that (1) salary of at least \$684/wk, and (2) job duties have to involve executive, administrative or professional discretion. Collective bargaining on normal hours is not important.	Government sources

Table 3. Country-level information hours averaging (Figure 10)

	Note
AUS	No agreement with employee or employee representative needed.
AUT	Averaging is typically only allowed by collective agreement. However, if it is impossible to conclude a collective agreement due to a lack of any employer organisation authorised to conclude collective agreements, averaging can be permitted by plant-level agreements. In this case, the same averaging periods apply as in collective agreements. Two types of hours averaging are possible with collective agreement: max. 48 hrs/wk for 52 weeks, or 50 hrs/wk for 8 weeks. Works Councils can also approve a higher weekly maximum hours (up to 60 hrs/wk for up to 24 weeks, but after eight consecutive weeks, overtime shall be inadmissible for two weeks) with maximum daily hours under averaging of 10 hours per day. Agreement with employee is needed.
CAN	In general, averaging arrangements are allowed provided that they have clear expiry dates. For example, in British Columbia, the parties are bound by an averaging agreement until its date of expiry or renewal, however at the employee's request, the employer has the discretion to adjust his/her weekly schedule so long as this does not change the average stated in the agreement. In Ontario, averaging agreements are allowed provided that they include clear expiry dates. In the case of non-unionised firms, the averaging agreement has a maximum duration of two years. The employer must apply to the Director of Employment Standards for the approval of the agreement. In Quebec, averaging is allowed, but in a non-unionised environment, the employer must have the approval of the Commission des normes du travail to averaging hours. There is no need for the Commission's approval when averaging is provided for under a collective agreement. In Alberta, averaging is not mentioned in legislation, but employers can permit employees to schedule compressed work weeks. Agreement with employee needed.
CHL	Hours averaging is not permitted.
CZE	No agreement with employee or employee representative needed. Single shifts may not be longer than 12 months.
DNK	Its hours averaging scheme exists for total rather than normal weekly hours.
EST	Agreement with employee needed. Averaging over 12 months is only allowed in the case of health care professionals, agricultural and tourism workers.
FIN	No agreement with employee or employee representative needed.
DEU	An hours averaging scheme only exists for total daily hours.
GRC	Agreement with employee representative needed. A second hours averaging scheme exists for total weekly hours (4 months with and without collective agreement - not shown here).
HUN	Agreement with employee representative needed only if collective agreement does not regulate hours averaging. Reference period can be extended to 12 months under a collective agreement in case of employee working in alternating shifts and seasonal workers.
ISL	An hours averaging scheme only exists for total weekly hours. The reference period can be exceptionally extended to 12 with a collective agreement.
IRL	An hours averaging scheme exists only for total weekly hours.
JPN	Averaging requires an additional written agreement between the employer and the trade union which a majority of workers join or a person who represents a majority of workers (if there is not trade union which a majority of workers join).
KOR	Korea has two hours averaging systems. The figure shows the main hours averaging system. This system requires a written agreement of an employee representative, which is a labour union in the case where the labour union consists of more than half the employees at a business or establishment, or a person who represents more than half of the employees in a situation where there is no labour union. Normal working hours cannot exceed 12 per day and 52 per week. The second system consists of a shorter reference period (two weeks) and lower maximum hours for each of these weeks (48 normal working hours), but does not require a written agreement with a labour representative. Hours averaging is not covered by collective agreements.
MEX	Hours averaging is not permitted.
NLD	An hours averaging scheme only exists for total weekly hours. The reference period can be exceptionally extended to 12 with a collective agreement. Hours can be averaged to maximum 48 hrs/wk. The average can be increased to 60 hrs/wk averaged over 26 weeks for on-call workers by agreement with the employee. The legislative limits do not apply to employees whose income rises above a certain level and who have a considerable control over their working and rest periods.
NZL	Hours averaging is not permitted.
NOR	By agreement between the employer and employee, normal hours can be averaged over 52 weeks with maximum hours not exceeding 9 hrs/day and 48 hrs/wk. In enterprises covered by collective agreements, the employer and the trade union can agree to average normal hours over 52 weeks with normal hours not exceeding 10 hrs/day and 48 hrs/wk, and to average maximum hours over 8 weeks with normal hours not exceeding 54 hrs/wk.
POL	No agreement with employee or employee representative needed.
PRT	Maximum total 50 hrs/wk without and 60 hrs/wk with a collective agreement. Agreement with employee needed only if collective agreement does not regulate hours averaging.
SVK	The averaging period is typically 4 weeks for work that is evenly distributed from week to week (maximum week-to-week variation of 3 hours). Where the nature of the work or operating conditions require an uneven distribution of hours, the employee or their representative must agree. In this case, the averaging period is 4 months. In all cases, the employee or their representative can agree to an averaging period of up to 12 months.

SVN	No agreement with employee or employee representative needed. SVN: A second hours averaging scheme exists for daily overtime hours with collective agreement (6 months)
ESP	Agreement with employee or employee representative needed.
SWE	The hours averaging scheme pertains to total weekly hours. No agreement with employee or employee representative needed.
CHE	No agreement with employee or employee representative needed.
TUR	Agreement with employee or employee representative needed.
GBR	An hours averaging scheme exists for total weekly hours (17 weeks or 52 weeks for objective technical or organisational reasons, with and without collective agreement). Agreement with employee needed.
USA	Hours averaging without collective agreement is only allowed for certain professions. With collective agreement, normal hours are limited up to 2,240 hrs/52 consecutive weeks, provided certain additional conditions are met.

Table 4. Country-level information on paid leave (Figure 11)

	Note	Data source
AUS	For each year of service with his or her employer, an employee is entitled to 4 weeks of paid annual leave, unless the employee is a shift worker, in which case he or she is entitled to 5 weeks of paid annual leave. Eight annual public holidays are prescribed by the Fair Work Act, with provision being made for further public holidays to be set at a local level (ignored here).	ILO TRAVAIL (2011)
AUT	30 calendar days (including five Saturdays), as per the Paid Leave Act (Urlaubsgesetz).	Eurofound (2019)
BEL	Figure refers to the private sector and differs between white and blue collar workers, younger workers and artists; the minimum statutory entitlement in the public sector is 24 days.	Eurofound (2019)
CAN	The right to annual leave arises after one year of continuous employment. The annual leave entitlement is 2 weeks and 3 weeks after 6 years of continuous employment (2 weeks are taken here). Public holidays refer to general holidays under the federal Canada Labour Code.	ILO TRAVAIL (2012)
CHL	"In order to be entitled to enjoy annual leave, workers shall have completed one year of service. The duration of the annual leave is 15 working days (taken here). Workers performing work in specific regions shall be entitled to enjoy 20 working days of annual leave, and shall be taken with preference in summer or spring, according to the needs of the service. The regions for which apply this rule are the following: Duodécima Región de Magallanes y de la Antártica Chilena, en la Undécima Región de Aysén del General Carlos Ibáñez del Campo, and in the Provincia de Palena.	ILO TRAVAIL (2011)
CZE	Expressed as four weeks in the Labour Code.	Eurofound (2019)
DNK	As per the Danish Holiday Act.	Eurofound (2019)
EST	As per the Employment Contracts Act.	Eurofound (2019)
FIN	As per the Annual Holidays Act (162/2005).	Eurofound (2019)
FRA	Expressed as 30 working days for full-time workers, including Saturdays, as per the Labour Code, Article L3141-3.	Eurofound (2019)
DEU	Expressed as 24 working days in the Federal Holiday Act (Bundesurlaubsgesetz).	Eurofound (2019)
GRC	24 working days for those working a six-day week; entitlement increases after one year's service.	Eurofound (2019)
HUN	According to the Labour Code, a minimum of 20 days complemented by additional days according to age and number of dependent children.	Eurofound (2019)
ISL	The legislation provides for a minimum of two working days' holiday for each month in employment during the past holiday allowance year (May 1st to April 30th). The minimum holiday for each year is therefore 24 working days. Sundays and other public holidays do not count as holidays in this respect, nor the first five Saturdays during holidays. The day before Christmas and New Year's Eve are public holidays after 12am (included here).	ILO TRAVAIL (2011)
IRL	Expressed as 20 working days in the Organisation of Working Time Act, 1997.	Eurofound (2019)
ITA	Expressed as four weeks, as established by Section 10 of Legislative Decree of 8 April 2003, No. 66.	Eurofound (2019)
JPN	Annual leave varies by tenure between 10 days (6 months) and 20 days (6 years and 6 months or more). 11 days are taken here (entitled to after 1 year and 6 months of tenure). Employees are not entitled to paid annual leave for any year in which they do not report for work at least 80 percent of working days. An employee is considered to have reported for work if absent due to a work-related injury or illness, for childcare or family care leave or for reasons related to childbirth. Effective April 1, 2019, the employees to take at least 5 days of annual leave if they have more than 10 days of unused annual leave.	Government sources
KOR	Workers are entitled to a minimum of 15 days of leave as of their second year of employment (15 days of leave are taken here). Days of leave increase by one day for every two year of tenure up to a maximum of 25 days. Labour Day is the only statutory paid public holiday before 2020. As of 2020, firms will become obliged to provide paid leave during the 15 public holidays. With the agreement of the employee representative, firms may arrange for employees to take alternative days off in lieu of public holidays. This reform will be implemented in a staggered fashion by firm size over a three-year window, starting with firms with 300 or more in 2020 and including all firms with five or more employees from 2022 onwards. In addition, as of 2018 employees are entitled to 11 days of paid leave in their first year of employment. Previously, employees were entitled to 1 day of leave per full month, but leave was deducted from their entitlement in their second year of employment.	Government sources
LVA	Expressed as four calendar weeks, as per Section 149 on annual paid leave of the Labour Law (adopted on 20 June 2001).	Eurofound (2019)
LTU	Expressed as 28 calendar days; certain groups, such as lone parents and people with disabilities, have an entitlement of 35 calendar days, according to Article 166(1) of the Labour Code. According to Article 126 of the Labour Code, employees must be granted an annual leave allowance no shorter than 20 working days when the employee works five days per week or no shorter than 24 days when an employee works six days per week. One instalment of annual leave may not be shorter than 10 business days (or 12 business days if the employee works six days per week).	Eurofound (2019)
LUX	As per the Labour Code, L232-2.	Eurofound (2019)

MEX	The minimum annual leave is 6 working days, after one year of service with the same employer. This duration is increased by 2 days up to a maximum of 12 for each subsequent year of service. 6 working days are taken here for annual leave. After the fourth year, annual leave increases by 2 days for every 5 years of service.	ILO TRAVAIL (2011)
NLD	Expressed as four times the number of weekly working days or hours, as per the Civil Code, Article 7:634.	Eurofound (2019)
NZL	Employees must have completed 12 months' continuous employment to be entitled to annual leave, although an employer may allow an employee to take an agreed portion of the employee's annual holidays entitlement in advance.	ILO TRAVAIL (2011)
NOR	21 days, as in the Annual Holiday Act of 1988, Section 5.	Eurofound (2019)
POL	Entitlement increases from 20 to 26 days after 10 years of employment, as per the Act of 26 June 1974, Labour Code, Article 154.	Eurofound (2019)
PRT	As per the Labour Code, Article 238.	Eurofound (2019)
SVK	Expressed as 20 working days or four weeks, as per the Labour Code, Section 103 (Act No. 311/2002, as amended).	Eurofound (2019)
SVN	Employment Relationships Act (2013).	Eurofound (2019)
ESP	Workers' Statute (Royal Decree Act 2/2015).	Eurofound (2019)
SWE	Expressed as 25 working days in the Annual Leave Act (Semesterlag).	Eurofound (2019)
CHE	If during a year, the worker, for any reason, has not been able to work for more than a month, the employer may reduce his/her annual leave in a 1/12 per complete month of absence. There is one day of federal annual leave. Cantons may take 8 other days as equivalent to Sunday for the purpose of establishing them as holidays (9 are taken here). The dates are of the discretion of the Cantons.	ILO TRAVAIL (2012)
GBR	Working Time Regulations 1998; entitlement expressed as four weeks.	Eurofound (2019)
USA	There are no federal or state statutory provisions establishing an entitlement to annual leave or public holidays for private employees, as these benefits are matters of agreement between an employer and an employee (or the employee's representative). The average private sector worker received 10 paid vacation days and six paid holidays in 2018 (Maye, 2019).	Maye (2019)

Table 5. Country-level information on overtime premium (Figure 12)

	Note	Data source
AUS	No legislative minimum premium, but arranged in awards (agreements) which cover most workers. Premium generally is 50% for first 3 hours and 100% thereafter.	OECD Working Time Questionnaire
AUT		Eurofound (2018)
BEL	Overtime work entitles the worker to extra compensation of 50% during weekdays and 100% on Sundays and public holidays	Eurofound (2018)
CAN	There can be variation across provinces. In British Columbia, overtime premium is 50% for work beyond 8 hrs/day and 100% beyond 12 hrs/day. (2012)	ILO TRAVAIL (2012)
CHL		ILO TRAVAIL (2011)
CZE		Eurofound (2018)
DNK	Set in collective agreements. Typically 50% for the first hour and 100% subsequently.	OECD Working Time Questionnaire
EST		Eurofound (2018)
FIN	50% for first 2 hours, 100% subsequently	Eurofound (2018)
FRA	25% for first 8 overtime hrs/wk and 50% for additional hours without company- or sectoral agreement. Collective agreements may change this with a 10% minimum.	Eurofound (2018)
DEU	Set in collective agreements. Typically 25%.	OECD Working Time Questionnaire
GRC	20% between 41-45 hrs/wk, 40% increase beyond that with a limit of 120 hrs/yr and 60% above this limit.	Eurofound (2018)
HUN	100% wage supplement applies on weekly rest days according to working time schedule (not necessarily Sunday).	Eurofound (2018)
IRL	No legal minimum, nor is there a statutory obligation for an employer to pay an overtime premium. Overtime premiums, if applicable, are either detailed in employment contracts or in collective agreements. 50% is a common overtime premium for the first few hours of overtime.	Eurofound (2018)
ISR	25% for first two hrs/day, 50% subsequently.	OECD Working Time Questionnaire
ITA	Legal minimum to pay an overtime premium, which is set in collective agreements. 10% plus additional payments are common.	OECD Working Time Questionnaire
JPN	See notes Annex A2. Detailed country-level information on working time regulation This Annex provides country-level information on working time regulation related to working time limits (Table 2), hours averaging (Table 3), paid leave (Table 4) and overtime premium (Table 5). Table 2.	Government sources
KOR	In the three years directly after the 2004-2011 reform, the overtime premium was 25% instead of 50% for first 4 hrs/wk.	Government sources
LVA	100% minimum; collective agreements or employment contracts can specify a higher supplement	Eurofound (2018)
LTU		Eurofound (2018)
LUX	Employer must compensate in principle by compensatory time off or in a time savings account (1.5 hr for every 1 hr overtime). Exceptionally, payment may be made to the employee with 40% premium.	Eurofound (2018)
MEX	100% for first 8 hrs/wk, 200% after that.	ILO TRAVAIL (2011)
NLD	Set in collective agreements. Information on common rates not available.	
NZL	No legal obligation for an overtime premium. 50% is a common premium in collective agreements.	OECD Working Time Questionnaire
NOR	Higher rates may be agreed in collective agreements.	Eurofound (2018)
POL		Eurofound (2018)
PRT	25% for first hr/wk and 37.5% thereafter	Government sources
SVK	Details for overtime work are usually defined in collective agreements.	Eurofound (2018)
SVN	Set in collective agreements. Generally 30% but up to 50% in a few agreements.	OECD Working Time Questionnaire
SWE	Set in collective agreements. Information on common rates not available.	
CHE	For office staff, employees and sales staff in large enterprises of the retail sector, the 25% premium only applies if overtime exceeds 60 hrs/yr.	ILO TRAVAIL (2012)
GBR	No legal minimum, nor is there a statutory obligation for an employer to pay an overtime premium. Overtime premiums, if applicable, are either detailed in employment contracts or in collective agreements. No information available on common levels in collective agreements.	Eurofound (2018)

TUR	Overtime premium is 50% for overtime (>45 hrs/wk). Hours above those specified in the employment contract length but below 45 hrs/wk are paid at a 25% premium up to 45 hrs/wk, and 50% above that.	Anxo & Karlsson (2019)
USA	Unless specifically exempt, employees covered by the Act must receive overtime pay above 40 hrs/wk at at least 1.5x their regular pay rates. Principal group exempt from overtime pay requirements are employees in a “bona fide executive, administrative, or professional capacity”. This entails that (1) salary of at least \$684/wk, and (2) job duties have to involve executive, administrative or professional discretion.	Government sources

Annex A3: Notes on the empirical evaluation

This Annex presents in more detail the results reported in Section 2.3 of the evaluation of the first step of the reform to lower maximum weekly working hours from 68 to 52 on the probability to work more than 52 hours.

A3.1 Main regression results

The results indicate a significant negative effect of the reform on the probability to work very long hours among employees working overtime in large firms under the common trend assumption (Table 6). The treatment effect is significant in empirical specifications without control variables (Column 1), with month times year dummies to remove seasonality and nonlinear time trends (Column 2), a set of demographic control variables (Column 3) and 1-digit industry and occupation dummies (Column 4).

The reform lowered the probability to work more than 52 hours among employees working overtime in large firms by 5 percentage points in the preferred specification (Column 4). This implies that the reform has decreased the incidence of working more than 52 hours among this group by about a fifth, from a level of 26% in the period before the reform (October 2017 – June 2018). The coefficient as well as effect size is very comparable to those reported in the main text in Figure 9, which defines interactions for each quarter separately and relates this to the quarter before the reform (April-June 2018). The regression coefficients of this estimation are shown in Table 7.

Table 6. The reform decreased the incidence of very long hours among employees working overtime in large firms

Dependent variable: probability to work more than 52 weekly hours.

	(1)	(2)	(3)	(4)
Reform dummy (relative to before the reform)	-0.056***	-0.090***	-0.093***	-0.096***
Treatment group dummy (relative to control group)	-0.003	-0.003	-0.002	-0.002
Treatment effect (reform * treatment group dummy)	-0.048***	-0.048***	-0.043***	-0.045***
Female (relative to male)			-0.051***	-0.055***
Age group (relative to 25-54)	15-24		-0.043***	-0.041***
	55-64		-0.037***	-0.043***
	65 or +		0.297***	0.253***
Education (relative to upper secondary)	Below upper secondary		0.025*	0.011
	Tertiary or +		-0.053***	-0.023***
Relation (relative to household head)	Spouse		0.009	-0.001
	(Grand)child		0.023**	0.027***
	(Grand)parent		-0.181***	-0.188***
	Other		0.049**	0.047**
Rural (relative to urban)			-0.035***	-0.042***
Married (relative to not married)			-0.045***	-0.050***
Month * year dummies	No	Yes	Yes	Yes
Sector & occupation dummies	No	No	No	Yes
Constant	0.245***	0.260***	0.314***	0.050**
Number of observations	27665	27665	27665	27665
Adjusted R2	0.013	0.013	0.026	0.037

Note: The sample covers employees working overtime in private non-exempt sectors or occupations on a permanent contract aged 18 or older in firms with 100 or more employees. Data refer to actual hours on the main job. Regression results of a linear probability difference-in-difference model with robust standard errors covering October 2017 – November 2019.

Source: EAPS.

Table 7. Dynamic specification

Dependent variable: probability to work more than 52 weekly hours.

		(1)
Treatment group dummy (relative to control group)		0.001
Time dummies (relative to Q1 (Apr-Jun '18) before the reform)	Q3 before (Oct-Dec '17)	0.043***
	Q2 before (Jan-Mar '18)	0.018
	Reform	-0.028*
	Q2 after (Oct-Dec '18)	-0.036**
	Q3 after (Jan-Mar '19)	-0.014
	Q4 after (Apr-Jun '19)	-0.045***
	Q5 after (Jul-Sep '19)	-0.061***
	Remaining months (Oct-Nov '19)	-0.060***
Effect (time dummy * treatment group dummy)	Q3 before (Oct-Dec '17)	-0.009
	Q2 before (Jan-Mar '18)	-0.000
	Reform	-0.055**
	Q2 after (Oct-Dec '18)	-0.044**
	Q3 after (Jan-Mar '19)	-0.059***
	Q4 after (Apr-Jun '19)	-0.047**
	Q5 after (Jul-Sep '19)	-0.038*
	Remaining months (Oct-Nov '19)	-0.047**
Female (relative to male)		-0.054***
Age group (relative to 25-54)	15-24	-0.041***
	55-64	-0.043***
	65 or +	0.253***
Education (relative to upper secondary)	Below upper secondary	0.011
	Tertiary	-0.023***
Relation (relative to household head)	Spouse	-0.001
	(Grand)child	0.027***
	(Grand)parent	-0.187***
	Other	0.047**
Married (relative to not married)		-0.050***
Rural (relative to urban)		-0.042***
Constant		0.013
Number of observations		27 665
Adjusted R2		0.037

Note: The sample covers employees working overtime in private non-exempt sectors or occupations on a permanent contract in firms with 100 or more employees aged 18 and older. Data refer to actual hours on the main job. Regression results of a linear probability difference-in-difference model with robust standard errors covering October 2017 – November 2019.

Source: EAPS.

A3.2 Parallel trend assumption

The principal assumption for a causal interpretation of the evaluation is that the (control) group of firms with 100-299 employees provides the appropriate counterfactual of the trend that (treatment) group firms with 300 or more employees would have followed if they had not been treated. It seems plausible that this assumption is satisfied.

First, for the selected period, the two firm sizes displayed parallel trends before the reform, as well as from one month after the reform until the end of the observed period. As a placebo test, pre-treatment effects are conducted two and three quarters before the reform

relative to the quarter before the reform. These placebo tests are insignificant (Figure 9 in the main text).

Second, the treatment and control groups seem largely comparable in terms of composition (Kahn-Lang and Lang, 2019^[31]). The pre-treatment probability during October 2017 and June 2018 to work more than 52 hours in both groups is 24%. In the regressions, the treatment group dummy is insignificant, implying no difference in the probability in the treatment compared to the control group over the course of the studied period conditional on the independent variables. In both groups, prime-age males, who are not married, are household head and live in an urban area are overrepresented. The treatment group contains relatively more highly educated individuals. For these large groups, the difference in probability to work very long hours was comparable to the average difference between treatment and control group (Table 8). The regressions include these compositional factors as control variables.

Table 8. Comparing the composition of the treatment and control group

Data refer to the pre-reform period (October 2017 – June 2018)

		Treatment group (firms with 300 or more employees)		Control group (firms with 100-299 employees)	
		% population	% > 52 hours	% population	% > 52 hours
All		100	24	100	28
Gender	Male	85	24	79	30
	Female	15	25	21	17
Age group	15-24	3	27	4	20
	25-54	90	25	75	26
	55-64	7	19	16	31
	65 or +	0	-	4	53
Education	Below upper secondary	2	41	11	35
	Upper secondary	35	26	45	29
	Tertiary or +	63	22	43	24
Relation	Household head	79	24	70	31
	Spouse	8	23	11	17
	(Grand)child	12	26	16	19
	(Grand)parent	-	-	0	47
	Other	1	32	3	28
Area	Urban	88	25	80	27
	Rural	12	17	20	29
Married	Not married	76	24	73	29
	Married	24	23	27	22

Note: The sample covers employees aged 18 and above working overtime in private non-exempt sectors or occupations on a permanent contract in firms with 100 or more employees. Data refer to actual hours on the main job. The data cover the pre-reform period (October 2017 – June 2018).

Source: EAPS.

Third, the discontinuity by firm size has been extensively used in papers evaluating the effects of the 2004-2011 reform which followed a similar staggered implementation (Ahn, 2016^[24]; Jeong Son, 2016^[23]; Lee and Lee, 2016^[25]; Park and Park, 2019^[21]).

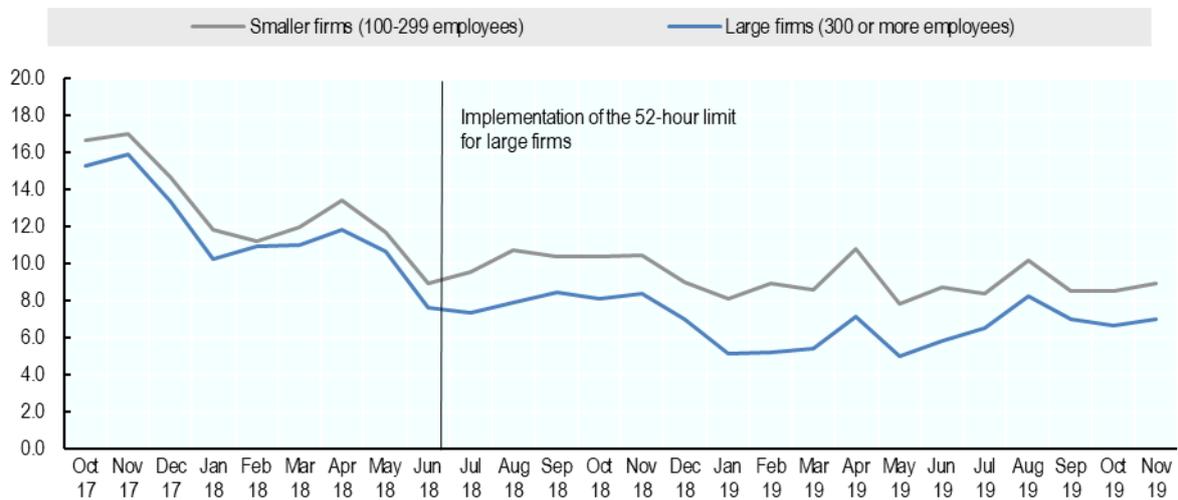
A3.3 Sensitivity tests

Taking the preferred specification (Column 4 of Table 6) as the starting point, the effect of the reform remains robust to a set of sensitivity tests.

A major concern with the empirical strategy followed thus far is that the sample of employees working overtime is selected on the basis of the same information as used in the dependent variable – reported hours worked last week. This implies that there can be endogenous selection if the working time reform affects the decision to work overtime. The reform still has an effect, albeit as expected weaker and less significant, if instead the sample is no longer selected on the basis of working overtime (Figure 13), or if the sample is selected based on pre-reform predictors of long hours that do not likely change because of the reform, such as low-skilled manufacturing workers.

Figure 13. Fewer employees, irrespective of their working hours, work very long hours in large firms since the implementation of the 52-hour limit

Percentage of employees working overtime who work more than 52 hours per week.



Note: The sample covers employees with non-zero working hours in private non-exempt sectors or occupations on a permanent contract aged 18 and older in firms with 100 or more employees. Data refer to actual hours on the main job. Data are seasonally adjusted by regressing the probability to work more than 52 hours on a set of month dummies for data from January 2016 onwards.

Source: EAPS.

The negative effect of the reform also remains significant when restricting the sample to household heads and spouses, only the household head, individuals aged below 65, 55, or above 24, or those who work fewer than 69 hours. Main results also do not change when the sample is enlarged by including temporary workers or the public sector, exempt or previously exempt sectors and exempt occupations (given the rough coding of exemptions because of coarse sector and occupation identifiers), and self-employed and unpaid family workers.³³

³³ There are essentially no self-employed or unpaid family workers in firms with 100 or more employees.

The negative effect of the reform also still appears when the time specification of the regression is adjusted. Starting the regression from 2016, or excluding 2017 or 2019, or leaving out (combinations of) months around the implementation date does not affect the results. The reform was not actively enforced until March 2019. Interestingly, no additional effect of the reform is observed for this enforcement date.

Results are also robust to the empirical specification. A logit model to account for the dummy dependent variable yields comparable results. Firms just below the threshold may also choose to adopt the new regulation (spillover effects), or employees may not be able to correctly observe firm size, leading to an underestimation of the effect size. Redefining the control group to firms with 30 to 99 employees to lessen these concerns at the cost of comparability with larger firms almost doubles the effect size.

The reform also lowered the probability to work more than 52 total actual hours worked (rather than actual hours on the main job) to a comparable extent. There are no indications that workers sought to circumvent limits on long working hours by combining multiple jobs (Friesen, 2001^[32]). A significant negative effect also appears when the dependent variable is defined as average hours on the main job or all jobs rather than a probability.

A3.4 Possible violations of the identification strategy

A number of concerns should be kept in mind when interpreting the results. First, the EAPS is a cross-sectional database, meaning that it is not possible to track individuals over time. It is not possible to account for unobserved individual heterogeneity. For instance, workers who prefer to work very long hours may move to smaller firms, whereas workers who prefer to not work very long hours may move to large firms. Second, as discussed before in the main estimations the sample selection may be endogenous to the reform.³⁴ Third, the discontinuity in firm size might be “fuzzy”. Individuals may not be able to correctly observe the firm size, or there may be spillover effects where smaller firms also adopt the new regulation (as they know they will have to comply later) or larger firms strategically decrease firm size in order to not having to abide by the rules. If smaller firms also adopt the new regulation, the effects of the reforms are underestimated. The fact that the probability to work long hours also dropped substantially (by 11%) in the control group in the month of the reform hints at such behaviour by smaller firms.

³⁴ Furthermore, the sample working overtime is selected on the basis of the same information used for the dependent variable (reported actual hours worked). Unfortunately, the dataset does not include questions on working (usually) overtime.