



► Research Brief¹

January 2021

► Beyond unemployment: The impact of the pandemic on hours worked in Turkey

1- Summary

Back in March 2020 and in the face of potentially massive lay-offs due to the effects of the pandemic many countries including Turkey decided to implement employment protection measures. Among these measures were a ban on dismissals as well as a facilitated procedure for companies to keep their workers on unpaid leave. However, what prevented millions of workers from being dismissed also prevented an easy calculation of the pandemic effects on economic activity. Since most workers kept their jobs, counting employment losses is but the tip of the iceberg in terms of hours worked lost.

The publication of hours worked and the number of workers on leave (absent from their workplace) by the Turkish Statistical Institute allows us to estimate the full impact of the pandemic on economic activity by measuring hours of work lost due to (1) employment losses, (2) an excess number of workers on leave and (3) a reduction in the number of hours by those who continue working. The total impact is then measured by the difference between the hours that were actually spent at work between February and September and the hours that would have been worked had not the pandemic existed during the same months.

In terms of content, Section 2 provides some context and compares the situation in Turkey with that of other countries. Section 3 explains the methodology and calculates the full impact of the pandemic on hours worked, overall and separately for men and women. Then, Section 4 offers an update with respect to the December issue of this brief with September data. This is done to follow up groups previously identified as vulnerable. At last, Section 5 concludes.

2- Background

The COVID-19 pandemic does not just pose a health risk; due to the virus transmission mechanism many activities that involve close human contact have been banned or restricted. As a result, economic activity and, thus, the labour market has been severely disrupted. Lower demand and business closures decreased the number of people working and, thus, households' income. In order to protect workers and their jobs, especially

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the ones belonging to the most vulnerable groups, governments reacted increasing aid packages and easing social protection mechanisms.

Yet not all governments followed the same approach nor applied the same measures. For example, Rothenberg & Constantino (2020) explains that in the US there is no law protecting employees from dismissals in the context of COVID-19. On the contrary, several European countries like Italy, France or Spain opted for strong employment protection measures. In these countries employees were protected from being dismissed and the requirements for contract termination were increased to a point where they were seldom used.

A similar approach was adopted by Turkey since the beginning of the pandemic. In fact dismissals were, as pointed out by Kasım (2020), banned for the “first time ever” and some laws were amended to facilitate employers access to a set of alternative pathways that would enable the continuation of the existing employment relationships. These actions include annual leave, collective leave, unpaid leave, and reduced working hours, see Gürkaynak et al. (2020) for a description of said methods. In fact, some of these policies have been renewed several times, signalling the ongoing nature of the COVID-19 crisis. For instance, according to Sahmay (2020) the ban on dismissals and the authorization that allows companies to send their workers on unpaid leave has been extended to January 17, 2021.

This employment protection approach can be deemed successful and have indeed minimized the impact of the pandemic on employment levels among formal employees. In fact, thanks to these measures employment went down by 6.0 per cent in Spain and by 9.6 per cent in Turkey² with the difference between these two countries being likely explained by differences in the share of formal employees. However, these success stories hide the existence of several million workers who were not working in spite of being counted as employed. Following the previous example, in Spain the excess in the number of workers that were absent from their job almost triple employment losses at 3.4 million. The same figures were harder to obtain for Turkey until December 2020, when the Turkish Statistical Institute started to release figures on hours worked and absentees from the Household Labour Force Survey. Turkstat figures estimate that only 20.45 million people were actually working in April 2020 even though figures on total employment for the same month reached 25.61 million. In addition, there is a sizeable reduction in the average number of weekly hours worked by those who remain working which should also be considered when calculating the impact of COVID-19 on the labour market, yet it is also neglected when one just looks at employment figures.

What this new data shows is that, as a result of the employment protection measures applied in Turkey, employment losses might only represent the tip of the iceberg in terms of impact in economic activity. The purpose of this research brief (Section 3) is to estimate the full impact of the pandemic on hours worked in Turkey. This is done not only calculating employment losses, which was already done in the December edition of this brief series, but also taking into account the losses derived from reductions in working hours among those who continue working and from the excess number of absentees (i.e. workers on paid/unpaid leave that would not have been on leave without the pandemic).

In addition, this brief also provides (Section 4) an update on the impact of COVID-19 on employment using September data with a focus on the most vulnerable groups. It should be noted that this kind of disaggregations cannot be done for the full impact (employment, absentees and hours worked) due to data limitations.

² The result for Spain compares employment levels held during the second quarters of 2019 and 2020. Turkey's figures are computed after comparing actual employment levels during the second quarter in 2020 with a counterfactual that calculates the employment level that would have existed without the pandemic.

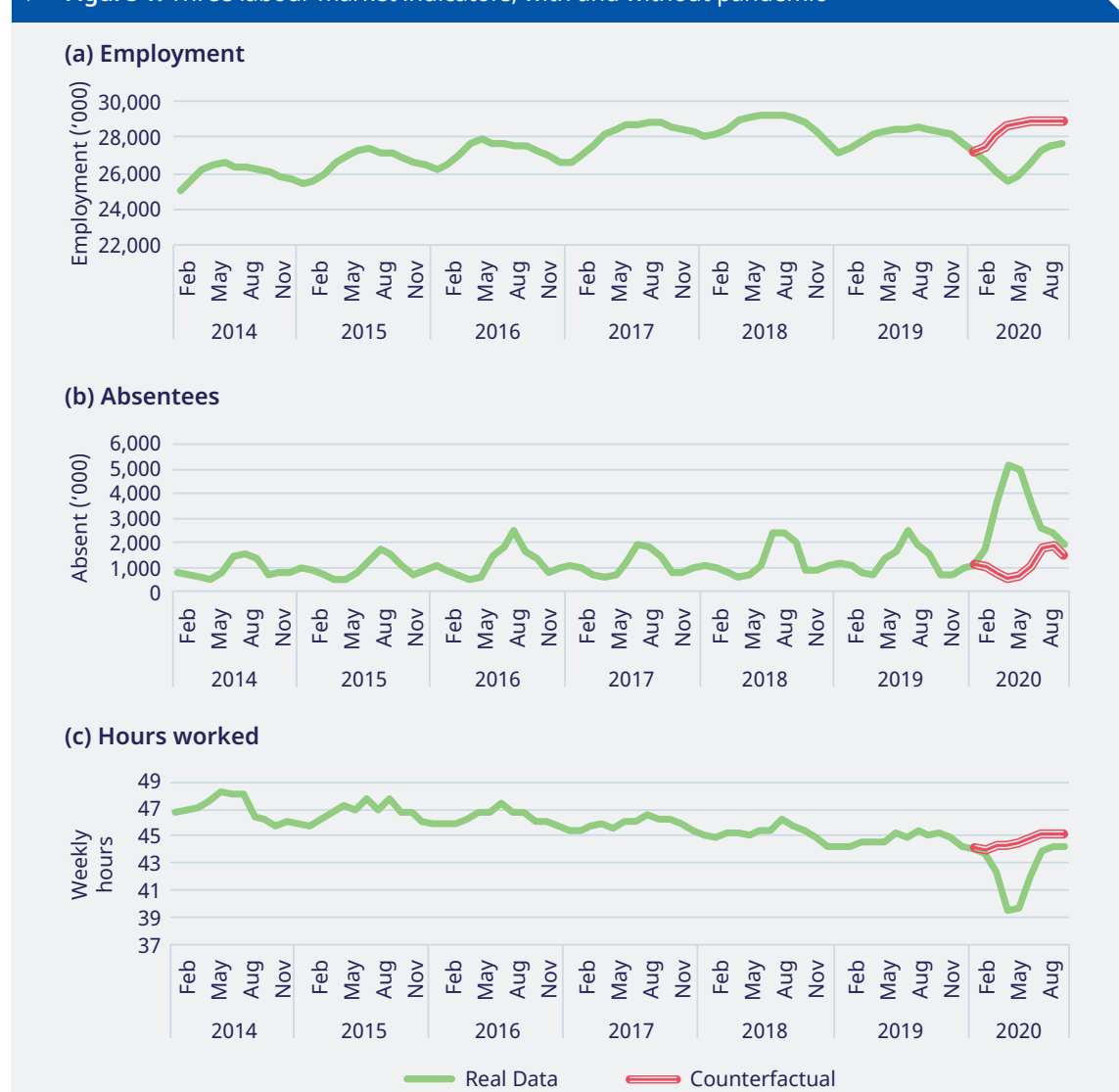
3- Impact on hours worked

The idea behind calculating the impact of COVID-19 on hours worked relies on the construction of a hypothetical scenario (a counterfactual) that generates a number of labour market outcomes had not the pandemic arrived in early 2020. This scenario allows us to compare with and without pandemic outcomes and, thus, allows us to estimate the impact of the pandemic.

3.1 Methodology

Counterfactuals can be constructed in several ways; some are rather simple, like assuming the labour market would have behaved as in 2019, some are more involved. This brief uses an autoregressive distributed lags model to forecast labour market outcomes. This model has the advantage of controlling for seasonality (using the month of the year), trends (by using past values of the predicted outcome) and the macroeconomic outlook of the country (thanks to other macroeconomic indicators that are plugged in the model).

► Figure 1. Three labour market indicators, with and without pandemic



Source: Turkstat statistics and ILO's own calculations. **Notes:** The figures show (a) employment levels, (b) absentees and (c) hours worked using actual data and a counterfactual from a hypothetical scenario where no pandemic existed.

For the purpose of estimating the overall impact of the pandemic on hours worked we forecast three variables, namely total employment, the number of people absent from their jobs and weekly hours worked.³ These outcomes are forecasted for the period February-September 2020 using information that was available up to January 2020. The assumption is that all macroeconomic aggregates were influenced by the pandemic after January and, thus, would bias the results if used.

The econometric models of all three variables use the month of the year as well as its own previous values. On top of that, employment estimates use past values of relevant macroeconomic information including the consumer and the retail confidence indexes, industry output, inflation, exports, the exchange rate of the Turkish Lira with the US dollar and a construction cost index. All variables are released monthly by Turkstat. The forecasted levels (in the scenario without pandemic) as well as the real data of these three outcomes⁴ are shown in Figure 1.

The sources of impact, namely, workers, absentees and hours worked are all measured in different units. In order to add them all up we convert the loss of employment and the excess number of absentees into an hours worked equivalent by assuming they would all have worked as much as the average worker in the absence of the pandemic.⁵ The impact on hours worked due to employment losses is defined as the difference in the number of workers with and without pandemic multiplied by the hours they would have worked.⁶ Then, the impact due to an excess in the number of absentees (workers on paid, unpaid or sick leave) is calculated as the difference between the absentees that would have existed without the pandemic and the ones that were absent during the pandemic multiplied by the hours worked they were expected to work.⁷ At last, the impact due to a reduction in the number of hours worked by those who continued working during the pandemic is calculated as the difference in hours worked (pandemic vs. no pandemic scenario) times the number of workers who continued active.

On top of this, we define a baseline which represents the hours that would have been worked had not pandemic existed between February and September. The impact is then defined in relation to this hypothetical baseline. The interested reader is invited to look at Appendix A for the precise definition of the baseline and each of the three impacts on hours worked.

3.2 Overall impact

The results show that the reduction in economic activity during the pandemic goes beyond employment losses. This can be seen in Figure 2a, where both, the baseline and the number of hours that were lost due to each of three sources under analysis are shown. According to the baseline the number of weekly hours that would have been worked in Turkey if the pandemic had not existed would have fluctuated between 1.16 and 1.25 billion. It is perhaps surprising to see hours worked declining during summer in spite of the seasonal increase in employment, yet this is explained by the increase in the number of people on holidays; that is, during summer more people are employed but less hours are worked.

³ Data publicly available at the website of the Turkish Statistical Institute.

⁴ The forecasted number of absentees has been further modified to take into account employment losses.

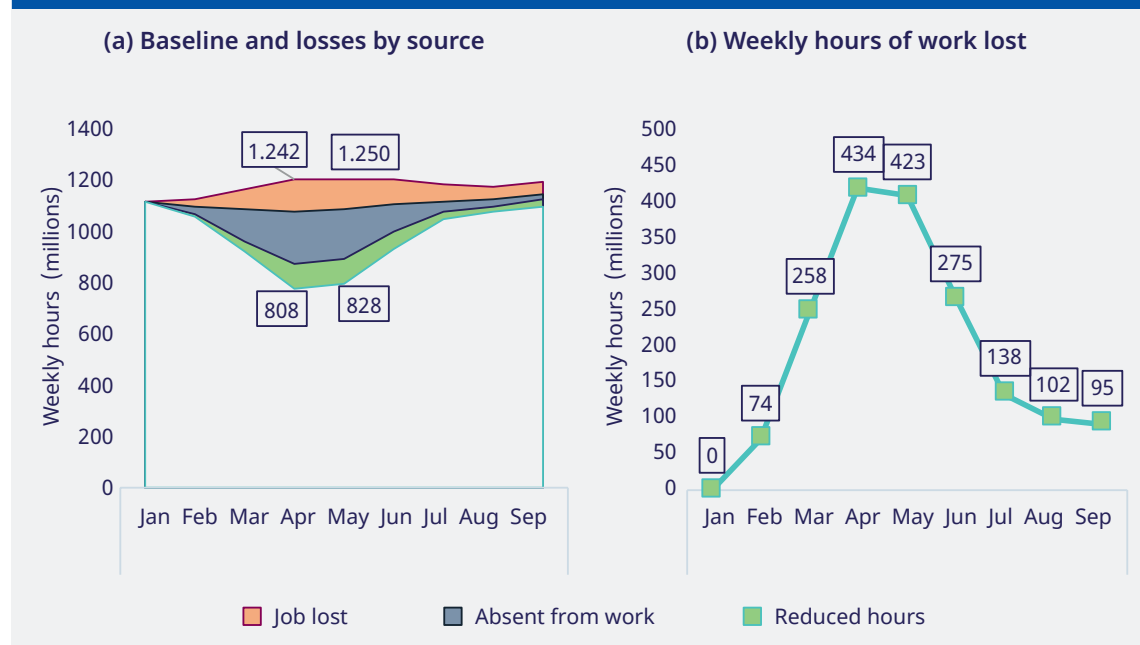
⁵ Some bias is expected from this assumption, yet it is expected to be small; for instance, formal employees work 46.3 hours a week while the informal ones work 46.8.

⁶ Plus a small adjustment to cater for the fact that some -a few- of these workers would have been on leave and, thus, would not have worked.

⁷ The number of absentees without pandemic is adjusted downwards by the proportion of the expected employment losses. The rationale is the following, if there is less employment there should also be less workers expected to be on leave.

In terms of impact and due to the bell shape of the baseline it can be seen how employment losses actually represent the tip of the iceberg in terms of losses of hours worked. Indeed, at the peak of the pandemic (April, May) the majority of losses were brought by the reduction in the number of hours worked among those who remained employed and, especially, by the increase in the number of absentees (workers on leave). Overall, the pandemic reduced the number of **weekly hours** worked in Turkey from 1,242 million to 808 million in April and from 1,250 million to 828 million in May, representing a loss of, respectively, 434 million hours and 422 million hours **per week**. Leaving April and May aside, Figure 2b shows that as soon as the most stringent measures were lifted in June, losses in hours worked started to disappear. However, there are also signals of stagnation or in other words, of an unfinished recovery even if the economy seems to have recovered most of the activity that was expected to have during 2020.

► Figure 2. Reduction in weekly hours worked due to COVID-19

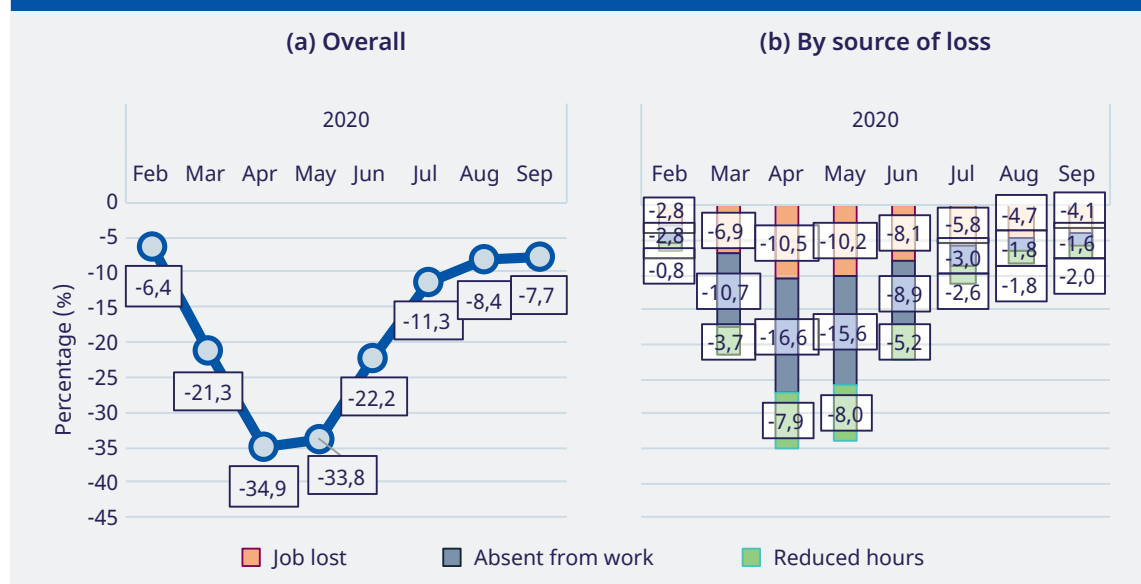


Source: Turkstat statistics and ILO's own calculations. **Notes:** Figure 2a shows the impact of COVID-19 on the number of weekly hours worked in Turkey. The impact is split into three sources, hours lost due to employment losses (brown), hours lost due to the excess number of workers who are absent from work (blue) and hours lost due the reduction in the number of hours worked among those who continue working (green). The impact is shown in relation to a baseline scenario (upper-line) that represents the number of weekly hours that would have been worked in Turkey had not the pandemic existed. Figure 2b shows the difference between the baseline and the number of hours actually worked during the pandemic.

The extent of the impact at the peak of the pandemic does not come as a surprise, though. Employment protection measures were suspected to hide sharp drops in the number of hours worked. Some indication in this direction was shown by a survey carried out by TEPAV (2020). Said survey only covered employees in the manufacturing and construction sectors yet the results show how the increase in the share of absentees and the reduction in hours worked affected Turkish workers 16 times more often than lay-offs. It should also be noted that the impact at the peak of the pandemic is higher than what was expected by ILO (2020a) for the Central and Western Asia subregion, 23.3 per cent reduction in hours worked in the second quarter (30.3 per cent in Turkey) although the recovery was also faster than what was predicted for the region, 18.5 per cent less hours worked in the third quarter (9.1 per cent in Turkey).

A different way of looking at the impact of the pandemic on economic activity is offered in Figure 3. On the one hand, Figure 3a provides the impact as a percentage of the baseline. According to the results, during the months of April and May more than one third of the economic activity of Turkey vanished. On the other hand, Figure 3b decomposes the impact into the three sources under analysis, employment losses, excess of absentees and reductions in hours worked. During the first phase of the pandemic losses due to absentees and less hours worked made up for more than two thirds of the impact. This was reversed towards the second half of 2020, with employment losses representing more than half of the hours worked deficit. What happened in Turkey at the peak of the pandemic does not differ much from what was showcased by countries that adopted similar measures, though. For instance, according to the research of Lemieux et al. (2020), Canada endured between February to April a 32 per cent decline in hours worked for workers aged 20-64 while employment did so by approximately 15 per cent.

► Figure 3. Reduction in hours worked (in %)



Source: Turkstat statistics and ILO's own calculations. **Notes:** This figure shows the impact of COVID-19 on the number of weekly hours worked in Turkey. Part (a) shows the impact as a percentage (%) of the baseline scenario. The baseline represents the number of weekly hours that would have been worked in Turkey had not the pandemic existed. Part (b) follows the same idea but splits the impact into three sources, hours lost due to employment losses (brown), hours lost due to the excess number of workers who are absent from work (blue) and hours lost due to the reduction in the number of hours worked among those who continue working (green).

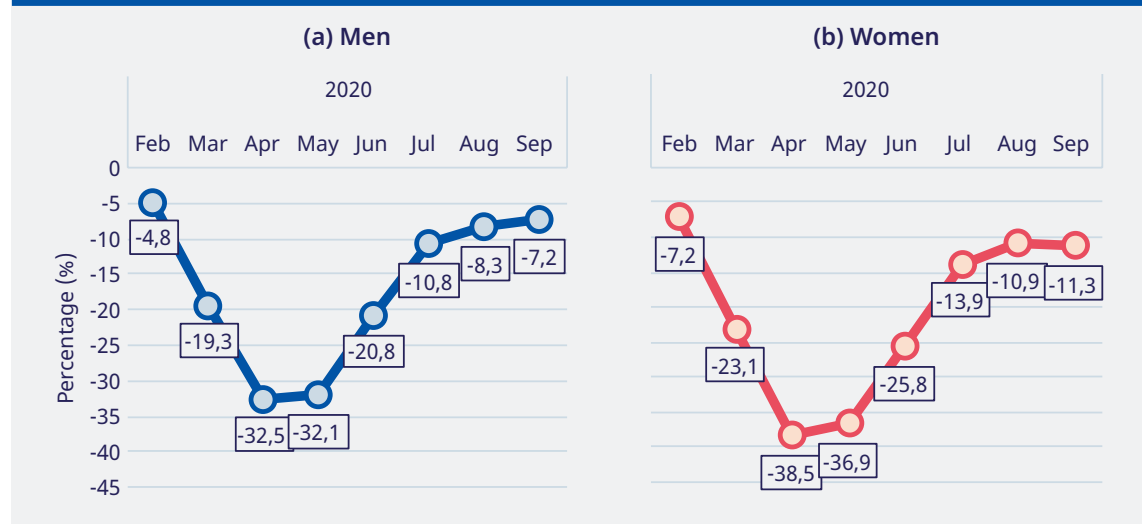
3.3 Gender overview

According to research prepared by ILO (2020b) women are likely to suffer more severe consequences from the effects of COVID-19 on the labour market. This result has already been confirmed in the US with respect to married women thanks to the research of Collins et al. (2020). The authors find that the pandemic have reduced these women's time at work significantly more than it did with the one of their partners, especially when there are young children at home. Something similar was found in Canada by Lemieux et al. (2020), with hours worked being reduced by 34 per cent among women and by 31 per cent among men between February and April.

Turkey was no exception to this trend and, as it can be seen in Figure 4, women sustained a stronger impact than men in every month since the start of the pandemic. On top of sustaining a bigger impact than men, women's hours worked recovery has got stagnated

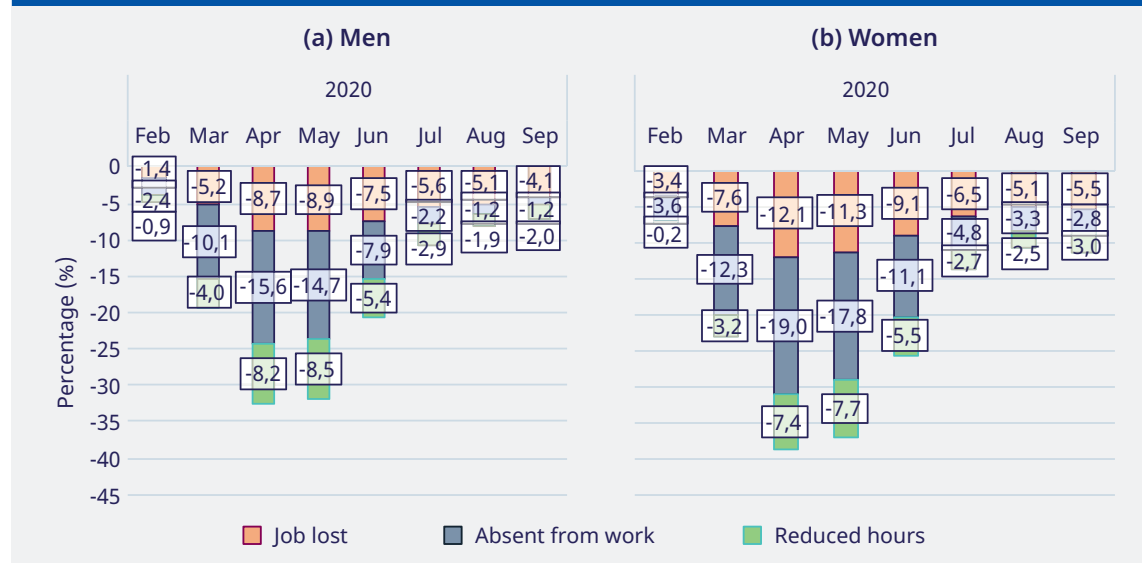
as of September. Even though hours worked losses for men kept decreasing from 8.3 to 7.2 per cent from August to September, those of women actually increased from 10.9 to 11.3 per cent. The reasons behind the halt in women's recovery can be analyzed in Figure 5 as it decomposes the loss in hours worked by source separately for men and women. There it can be seen that women's work hours went away from the baseline due to both, employment losses and a reduction in the number of hours worked by those who are still working (in green).

► Figure 4. Reduction in hours worked (in %), by gender



Source: Turkstat statistics and ILO's own calculations. **Notes:** This figure shows the impact of COVID-19 on the number of weekly hours worked in Turkey. The impact is shown as a percentage (%) of the baseline scenario. The baseline represents the number of weekly hours that would have been worked in Turkey had not the pandemic existed. Results are disaggregated by gender.

► Figure 5. Reduction in hours worked (in %), by gender and source



Source: Turkstat statistics and ILO's own calculations. **Notes:** This figure shows the impact of COVID-19 on the number of weekly hours worked in Turkey. The impact is shown as a percentage (%) of the baseline scenario. The baseline represents the number of weekly hours that would have been worked in Turkey had not the pandemic existed. In addition, the impact is split among three sources, hours lost due to employment losses (brown), hours lost due to the excess number of workers who are absent from work (blue) and hours lost due to the reduction in the number of hours worked among those who continue working (green). Results are disaggregated by gender.

Disaggregated data on hours worked and leave is not available and, thus, a complete sectoral analysis cannot be used to further disentangle the reasons for the lack of recovery in women's economic activity. Still, an analysis of sectoral employment trends shows that the lack of a recovery in face to face activities like social work and personal services may have affected women negatively. In addition the slowdown in the number of jobs provided by the hospitality sector due to the end of the holiday season seem to have affected women more than it did to men.

More gender differences arise from an analysis of the sources in Figure 5. For instance, women lost more jobs than men (proportionally) and were more affected by leave arrangements throughout the whole pandemic. One plausible source of these differences is the sectoral employment composition of men and women. According to Alon et al. (2020) women's heavier employment losses in the US are due to their employment being concentrated in the hospitality and care sectors, as it is also the case in Turkey. Leaving sectoral issues aside, one should also keep in mind that women in Turkey deal with most of the care work duties at home. This was true before the pandemic⁸ but according to Power (2020) these differences have increased because of the pandemic. During the pandemic many families had to educate their children and take on the role of teachers without much external support.

4- Impact on employment (September update)

The December issue of this research brief showed strong signals of employment recovery across several sectors and groups, yet it also showed young people, and in particular young women were having a harder time getting back to work. In addition, informal employment and the hospitality sector remained far from the employment levels they were expected to attain had not the pandemic existed.

This section throws in the September 2020 data published by the Turkish Statistical Institute and updates the forecasted employment levels of the December Research Brief. The econometric model that produces the forecasts (employment levels had not the pandemic occurred) is introduced in Section 3 of this brief and in the methodology section of the December edition. As a summary, for each employment variable (let us say young people's employment) a forecast of the values it would have attained between February to September is built using past information from said indicator, past values (up to January 2020) of a number of macroeconomic aggregates and the month of the year. Then we compare the forecasted values with the actual values achieved by each of the groups under analysis so as to obtain the impact of COVID-19 on employment.

4.1 Gender and age-groups

Young people were among the most affected ones during the 2008-2009 financial crisis, with increasing NEET rates that prompted a call for action by the 101st International Labour Conference back in June 2012. The COVID-19 crisis was not an exception in terms of young people being among the most affected ones, prompting the Governing Body of the ILO⁹ to renew the organization's commitment to youth employment, releasing a long-term action plan for the coming decade. During the current crisis young people in Turkey (persons aged 15-24) found themselves among the most affected groups with employment losses that

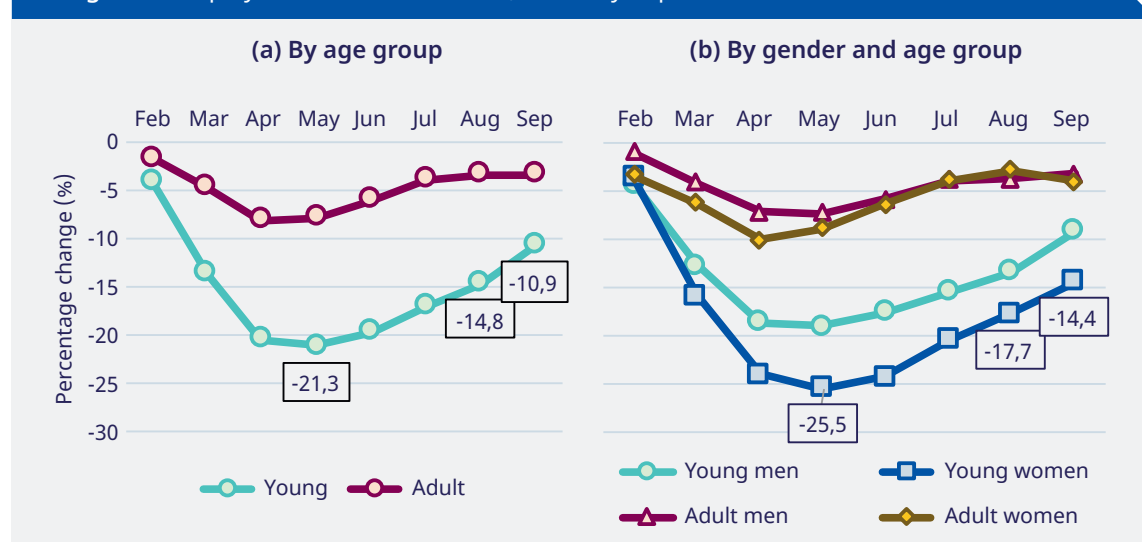
⁸ It can be seen in the Time Use Survey 2014 and in the Statistics on Working Children survey 2019 both carried out by the Turkish Statistical Institute.

⁹ See ILO (2020c).

went over 20 per cent during the months of April and May. This possess two problems: The first problem is a rather obvious one, in the short-term lack of jobs produces income losses. The second one is more of a concern for the longer term, once young people become a NEET their odds of exiting such status are 50.6 per cent for men and just 23.5 per cent for women.¹⁰

According to Figure 6, young people's recovery of jobs continued in September, with the share of employment lost due to the pandemic falling from 14.8 per cent to 10.9 per cent. This recovery holds for both young men and young women. in the absence of disaggregated data on hours worked and leave, this is a result that gives hope in terms of minimizing long-term damage with respect to labour market attachment - or the lack thereof. In contrast the employment recovery among adults has stopped. In fact the effect of COVID-19 increased slightly among adult women, which is the cause of the overall employment loss among all women.

► Figure 6. Employment losses' evolution, February-September



Source: Turkstat statistics and ILO's own calculations. **Notes:** The figures provide employment losses caused by COVID-19 as a percentage of a baseline scenario. This baseline represents the employment level that would have been achieved without COVID-19.

4.2 Hospitality sector, informality and more

Young people aside, we find workers in the hospitality sector among the most affected ones due to the crisis. This is not because of the particularities of the Turkish labour market but because of the social nature behind the activities carried out by restaurants, bars, and hotels. In fact, similar effects were felt in Canada where, according to Lemieux et al. (2020) those working in the accommodation and food services industries were the most affected ones due to shutdowns.

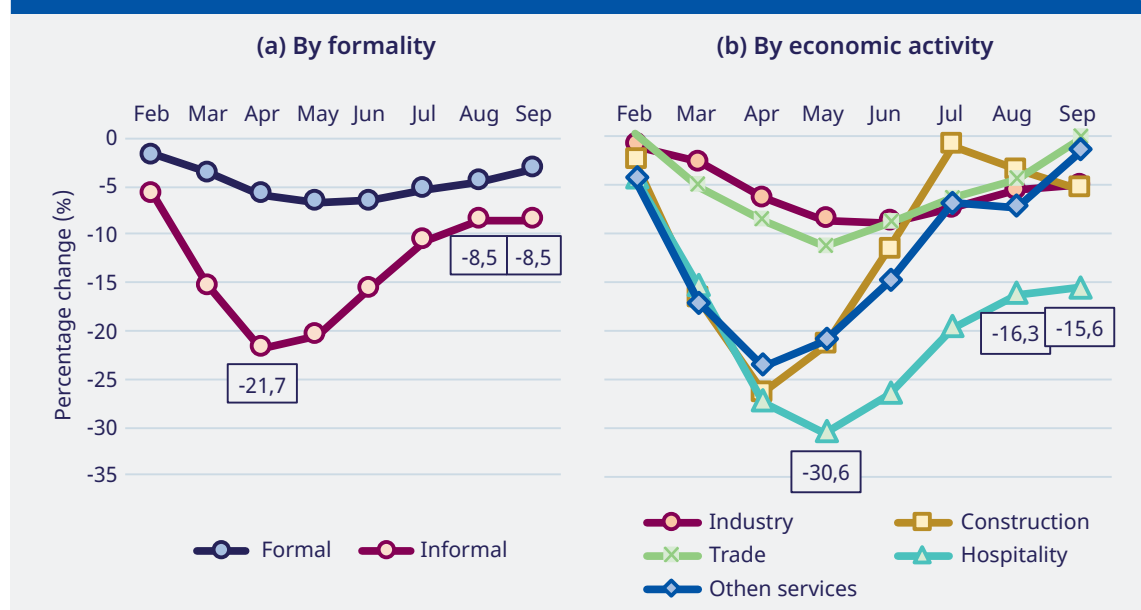
A similar message can be retrieved about the United States from the research of Kurmann et al. (2020). These authors focus on the leisure, hospitality and retail trade sectors finding a drop in economic activity of 60 per cent between mid-February to the end of April. It is worth noting that this figure does not only include employment losses but also reductions in hours worked and forced leave, i.e. it is not directly comparable with the employment losses shown in Figure 7.b. Still, once data on hours worked and leave becomes available for said sector in Turkey it would not be surprising to finding drops in activity similar to the ones found in the US.

¹⁰ Statistics obtained using data from the Household Labour Force Survey of Turkey 2019.

The hospitality sector indeed went through a slump at the peak of the lockdown measures (April, May) in terms of employment. But this is not the main problem affecting the sector since, as it can be seen in Figure 7.b, other economic activities like the construction sector and the “other services” activities reached similar employment losses in April but recovered employment levels later on. In fact, it is the continuation of the pandemic in terms of infections, the maintenance of social distance and the devastation of global tourism what seem to be keeping hospitality away from the forecasted employment levels in the third quarter of 2020. The potential for long-term effects on the tourism-hospitality sector were already forecasted by the World Tourism Organization back in March and have been confirmed by actual data as the year unfolded.¹¹

The slowdown in the hospitality sector has spillover effects on other groups of employment. For instance, informal employment stopped its recovery at the same time the hospitality sector did so. The apparent correlation is likely causal given the relatively high share of informal jobs in bars, restaurants, and hotels. Leaving sectoral considerations aside, the loss of informal employment (not compensated with a net growth of jobs in the formal sector) means that some of the most vulnerable families may be at an even higher risk of exclusion.

► Figure 7. Employment losses' evolution, February-September



Source: Turkstat statistics and ILO's own calculations. **Notes:** The figures provide employment losses caused by COVID-19 as a percentage of a baseline scenario. This baseline represents the employment level that would have been achieved without COVID-19. Activities are defined using NACE rev.2 codes. Industry refers to sections B, C, D and E, construction to section F, trade to section G, hospitality to section I, and other services to sections R, S, T and U.

Similar conclusions can be reached when looking at services and sales workers (with a significant share in the hospitality sector). The impact of the pandemic on this group also got stuck at around 10 per cent in September 2020.

Last but by no means least, September left positive signals in terms of employment recovery among both, formal and informal employers. For example, the number of formal employers, albeit still far from historical figures, increased to 852 thousand, coming from 808 thousand back in June 2020.

¹¹ <https://www.unwto.org/international-tourism-and-COVID-19>

5- Concluding remarks

The employment protection measures embraced by Turkey surely limited the damage brought by the pandemic among formal employees. However, they made employment levels an unreliable indicator of the actual impact of the crisis on economic activity. In order to overcome this problem this research brief uses data on hours worked and on the number of absentees (employed individuals that are not working) together with employment levels to estimate the full impact of the pandemic on the labour market. To obtain the impact we forecast the employment levels, the number of absentees and the number of hours that would have taken place had not the pandemic hit Turkey in early 2020. The impact is then calculated as the difference between the forecasted values and the actual values.

The main result offered by this brief is that hours worked in Turkey went down by 34.9 per cent in April and 33.8 per cent in May, a period which coincides with the strictest lockdown measures. The disaggregation of the impact by source (employment, leave, hours worked) allows us to see that less than a third of the hours worked lost in April were due to employment losses. In other words, the analysis of employment levels shows just the tip of the iceberg in terms on reductions in economic activity.

Data on hours worked and absentees was also made available by gender. The analysis of this data confirms that women were hit harder by the pandemic. They faced a reduction of 38.5 per cent (April) in their hours worked, compared to the 32.5 per cent loss faced by men in the same month. The analysis of the sources behind the loss in hours worked shows that women were particularly more affected than men in terms of excess leave (absentees) and employment. It might be worth examining the extent to which gender differences in the time spent on duties and responsibilities at home can explain the different impact, as it has been the case in other countries.

On top of these results, the September update released by the Turkish Statistical Institute also allows us to continue monitoring the impact of the crisis on the most vulnerable ones. An analysis of this data presents positive and not-so positive news. On the one hand young people's employment levels (for both, men, and women) keep a steady pace towards recovery, minimizing, thus, the chances for long-term damage in young people's employability. Moreover, the number of employers, both, formal and informal, continued the upward trend that started in August and kept increasing their number. This offers hope for stronger employment creation in the future.

On the negative side, employment losses in the hospitality sector remained at around 16 per cent, unaltered after August probably due to the end of summer and the holiday season. Given the protracted nature of the pandemic a recovery in this sector is not expected until the summer of 2021. At the same time, slowdowns in recovery can also be attested among informal workers and service workers, both of them sharing strong linkages with the hospitality sector.

To sum up, newly released data on hours worked and the number of workers on leave has opened the door to a deeper analysis of the impact of COVID-19 on economic activity. Still, available data is not disaggregated enough to fully identify those that are most affected by the crisis. Future analysis should deal with this issue as soon as data becomes available. Moreover, the enhanced curfews imposed since late November have likely affected economic activity once again and an effort to continue monitoring the effects of these measures is deemed necessary.

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Appendix A- Decomposition of hours worked

The number of hours worked in a given week had not the pandemic existed is given by the number of people who would have been employed and working (i.e. not absent from the job) during said week multiplied by the average weekly hours that would have been worked. These hours are referred to as the “baseline”:

$$B = (E^N - A^N)H^{N,w}$$

Where E refers to employment, A to absentees and H to hours worked. In addition, the superscript “N” denotes a scenario without pandemic (shorthand for Normal) and the superscript “w” denotes that the hours worked refer to those who actually worked during the reference week.

The baseline is then decomposed into 4 components; three of these components refer to hours lost due to the pandemic in terms of a) the number of people who should have been working but are no longer employed, b) an increase in the number of workers who remain employed yet are absent from their jobs (worked 0 hours) and c) the reduction in hours worked that affected those who remained working. As such, the total impact is defined as:

$$I = \underbrace{(E^N - E^P)H^{N,w} \frac{(E^N - A^N)}{E^N}}_{\text{Employment losses}} + \underbrace{\left(A^P - \frac{A^N E^P}{E^N}\right)H^{N,w}}_{\text{Excess of absentees}} + \underbrace{(E^P - A^P)(H^{N,w} - H^{P,w})}_{\text{Reduction in hours}}$$

Where the superscript “P” denotes a scenario with the pandemic. It should be noted that the number of employed people in the first component has been adjusted downwards assuming some of these workers would have been on leave -as they usually do. In addition, the excess number of absentees is not just the subtraction of absentees during the pandemic minus those who would have been absent without pandemic; since the number of people employed during the pandemic is lower the counterfactual number of absentees have also been lowered by the proportion of employment losses.

The fourth component is made of the hours that were actually worked during the pandemic and is defined as:

$$L = (E^P - A^P)H^{P,w}$$

And, by definition, the baseline is equal to the sum of the impact plus the hours actually worked:

$$B \equiv I + L$$