Left behind in COVID times: The impact of the pandemic on job loss and job finding rates of vulnerable groups in Serbia

Abstract

This paper analyses the effects of the COVID-19 pandemic on the job loss and job finding rate in Serbia, focusing on groups with already low employment before the pandemic, such as youth, women, low-educated and rural areas. The results indicate that COVID-19 caused stagnation in employment growth in Serbia. The stagnation resulted from both increases in job losses and decreases in the chances of finding a job, with the latter effect being much more prominent. Young workers faced the highest increase in job losses, partly due to their higher shares in informal wage employment. In contrast, decreases in job finding rate were particularly high among low-educated and in rural areas and resulted from lower job availability, mainly in agriculture and the informal sector. As a result, after the first year of the COVID-19 pandemic, employment opportunities of vulnerable groups further deteriorated, and already existing labour market inequalities were exacerbated. These effects are partially due to implemented policies to mitigate the crisis, which were focused on preserving permanent employment while leaving vulnerable workers and groups unprotected.

1. Introduction

As a response to the COVID-19 outbreak, practically all countries in the world introduced containment measures, including shutting down the economy to a certain degree, to prevent the collapse of the healthcare systems and massive deaths. However, the containment measures had an adverse effect on economic activity and employment. During the first year of the pandemic, real GDP in the EU decreased by 6.1 percent, while the employment rate (20-64) decreased by one percentage point, following a period of steady growth since the economic crisis in 2008. This decrease stems from both increases in transitions out of employment and decreases in transitions into employment (Eurostat 2022b). In other words, while more workers lost their jobs during the pandemic, at the same time, opportunities of finding a new job also decreased.

COVID-19 epidemic can deepen existing labour market inequalities and worsen the position of those who are already most vulnerable (Ahmed et al. 2020, Perugini & Vladisavljević, 2021). Initial estimates suggested that vulnerable workers such as informally and temporarily employed, self-employed, and workers in small firms, were more likely to be hit due to lower job security or lower liquidity (IMF, 2021). Additionally, containment measures and decreasing aggregate demand had harder effects on so-called "non-essential" sectors (e.g., hospitality, transport, arts, etc.). Vulnerable groups such as youth, low-educated and women, who before the crisis had lower employment, are more likely to work in these jobs and

sectors. Therefore, their employment was more likely to be further lowered during the pandemic.

The impact of the pandemic varied between developed, middle-income and developing countries (Lagakos and VanVuren, 2020; Perugini & Vladisavljević, 2021). From the comparative perspective, a particularly interesting case is Serbia, a small-open, middle-income country with high levels of informal and other vulnerable types of employment and significant disparities in employment rates for different demographic groups (youth, low-educated, women, etc.). The focus of the implemented policies to mitigate the COVID-19 crisis in Serbia was on permanent employment, with employment retention subsidies, applied across the entire private sector, regardless of anticipated risks or financial results during the lockdown. [1] On the other hand, the vulnerable jobs and groups who were most likely to be hit by the COVID-19 pandemic were least protected by the measures implemented by the Government of Serbia (IES, 2022). Compared to other economies, the GDP drop in Serbia in 2020 was relatively low – only 1%, with the employment rate in 2020 remained unchanged - an interruption of the favourable trends in the former period employment rate rising from 2014 until 2019 from 42 to 49 percent (IES, 2022).

This paper analyses the effects of the COVID-19 pandemic on transition probabilities, i.e., the job loss and job-finding rate in Serbia during 2020, focusing on vulnerable groups, such as youth, low-educated, women and persons from rural areas. To that end, we exploit the panel structure of the Labour Force Survey (LFS) data for Serbia[2] and use a difference-in-difference framework to analyse the differences between vulnerable groups and their counterparts in changes in transition probabilities during the first year of the pandemic. Furthermore, we explore how a higher likelihood of performing vulnerable jobs impacted the changes in vulnerable groups' transitions.

Since the onset of the crisis, many papers have estimated the short-term impacts of COVID-19 on labour market outcomes (e.g. Casarico & Lattanzio, 2020; Cowan, 2020; Lemieux et al., 2020; Montenovo et al., 2020), mainly focusing on the initial period of the pandemic. Soares & Berg (2020) and Koczan (2022) studied labour market transitions, but both papers concentrated only on the period when strict containment measures were in place, and the economic activity was impeded. In this paper, we look at a longer period, by considering the annual (quarter-on-quarter) impact of COVID-19, and we focus not only on job loss rates but also on job-findings rates.

The results indicate that COVID-19 halted the positive employment growth trend in Serbia. This negative impact can be attributed to two developments: increase in job losses and

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[1] Business which did not cut their employment by more than 10% were eligible employment retention subsidies. The measure included entire private sector, apart from the financial sector, with more substantial and easier access to assistance to small and medium enterprises than to large companies. The measures initially included a payment of the minimum wage for each employee for three months.
[2] The same data is used to estimate of labour market transitions in EU, according to the Eurostat methodology (Eurostat 2022b)

decreases in the chances of finding a job, with the latter effect being much more prominent. Younger workers (20-29) faced the highest increases in job losses during the first year of the pandemic. This increase can partially be explained by their higher shares in informal wage employment and sectors with a higher likelihood of job loss (such as hospitality, arts, recreation, etc.). On the other hand, the probability of finding a job decreased practically for all the groups analysed, but it was particularly pronounced among those with primary education and in rural areas. The lower likelihood of finding a job for the low-educated and youth can almost entirely be attributed to the lower number of new jobs in the agriculture sector, which are typically performed informally.

The results imply that implemented policies to mitigate the crisis, focused on preserving permanent employment, although undoubtedly keeping some jobs and business, led to increased labour market inequalities. Vulnerable groups were double disadvantaged: they worked in less secure jobs in the first place and were not protected by employment retention subsidies. Better targeting of assistance towards permanent employment could have provided funds to finance programmes targeting vulnerable jobs and preventing further deterioration of the vulnerable group's position.

In this paper, we aim to understand which vulnerable groups experienced difficulties to keep their jobs and/or to find a job in 2020. We contribute to the literature in five ways. First, we expand the understanding of the distributional and differential impact of the COVID-19 health crisis for a country with a large informal sector where many workers can be classified as vulnerable. Second, by considering the labour market transitions throughout 2020, we investigate the annual effects of the pandemic, compared to the previous studies, which study only the impact of the pandemic in the first four months. Third, in contrast to other studies, we empirically explore the role of vulnerable groups' job characteristics in transition changes and systematically compare vulnerable groups' job losses or job finding changes during the first year of pandemic. Four, we use difference-in-difference framework and compare the transitions before and during the COVID-19 pandemic, while also controlling for a large number of covariates and selection effects. Finally, our research also has policy implications, as we identify groups most in need of ex-post government support measures and which should be targeted if similar shocks occur in the future.

This paper is organised as follows. After the introduction, section 2 discusses relevant literature on labour market transitions. Section 3 introduces the data and the variables that will be used. In section 4, we present the methodology and results from estimating the effects of COVID-19 on job loss and job finding. In sections 5 and 6, we analyse the extent to which differences in job characteristics can be used to explain group differences in job loss and job finding, while section 7 concludes.

2. Literature review

The COVID-19 pandemic is an unprecedented global health crisis which has slowed down the economic activity and impacted labour markets. While at the beginning of the pandemic most countries had implemented severe lockdowns, after this initial shock countries learnt to live with the virus and adjusted the movement restrictions depending on the prevalence of the virus in the population. The impact of the economic crisis was felt throughout 2020 with the real GDP falling by 5.9% points in the EU (Eurostat, 2022a). The unemployment rate in the EU started rising at the end of first quarter of 2020 and reached it's peak in the third quarter. Towards the end of 2021 it went back to its pre-crisis levels (Eurostat, 2022b). Many studies (Forsythe et al, 2020; Lemieux et al., 2020; Von Gaudecker et al., 2020) find that the crisis had a negative impact on workers, both on intensive (the hours worked) and extensive margin (employment). Most European countries introduced job retention schemes, mostly short-time work schemes, which were successful in preventing a surge in unemployment (OECD, 2020). The purpose of job retention schemes was to reduce the labour cost of the companies and help them bridge the difficult period until the economy starts recovering.

Therefore, once the health crisis started, the governments intervened with policies aiming to prevent mass lay-offs (e.g. job retention schemes), however, persons in these vulnerable jobs were very often not covered by these policies (e.g. job retention schemes). Vulnerable workers include informal workers, who have no job protection and who are legally not employed (OECD/ILO, 2019), and temporary workers as their contract length is predetermined and there is no guarantee of renewal. In downturns these workers are the ones to be laid off first (Peck and Theodore, 2007; ILO, 2016). Moreover, informal employees were not protected by job retention schemes, while temporary workers were covered by job retention schemes only when they held longer period contracts. Additionally, self-employed and workers in small firms were also more vulnerable, as they are more exposed to economic shocks due to their greater credit constraints and a higher exposure to weak consumer demand (Kocchar, 2021). The economic crisis caused by the virus COVID-19 was also highly sectoral. Some sectors, most notably hospitality and more broadly the services sector, were severely hit, while other sectors, such as healthcare or logistics experienced a demand surge (Canton et al., 2021).

Groups with already lower employment rates, such as youth, women and low-educated, given the structure of their employment characteristics, are considered to be under a greater impact of COVID-19 pandemic. Therefore, the economic crisis caused by the virus COVID-19, aside from the overall adverse effects on the labour market, can also cause deepening of the existing inequalities on the labour market. Youth and low educated workers are more likely to be hit by the effects of COVID-19 pandemic as they work more frequently in vulnerable contractual employment arrangements (e.g. temporary contracts, employment in the informal sector). For young workers the consequences of economic downturns can be particularly strong as prolonged periods of job search or bad job matches at the beginning of one's career can have long-term effects on their future employment and incomes (Kahn 2010, Genda et al. 2010, Oreopolous et al. 2012, Raaum and Røed 2006). During the pandemic of COVID-19, women had to work more in the household due to increased household chores such as childcare and increased needs for home schooling due to recurring school closures. These

additional responsibilities in the household were an additional burden for the working women (Alon et al., 2020; Del Boca et al., 2020; Farré et al., 2020). The rural population is also more vulnerable as informal employment is more frequent than in urban areas and as the lockdowns also caused massive and unprecedented disruption to agricultural activities (Rawal et al. 2020). The clustering of the vulnerable demographic groups in self-employment, temporary jobs and informal employment applies for the Serbian case as well. Youth, low-educated, and those residing in rural areas are more likely to be informally or temporarily employed. In addition, low-educated and rural workers are more likely to work in small firms, while young workers are more likely to be employed in tourism. Finally, women are more likely than men to work in the informal sector and in tourism (IES, 2022).

In analysing the effects of COVID-19 overall and on vulnerable groups it is particularly interesting to analyse if the decrease in net stock employment is the result of increased job losses or decreases in abilities to find new jobs. Aside from theoretical implications, this can also be important from the policy perspective, as two explanations of the decreased employment have different policy implications and require different interventions. Soares & Berg (2021) study short-term labour market transitions, i.e. transitions into and out of work, in a selected number of countries in Europe and in South America during the initial period of COVID-19 crisis when most of the countries implement lockdown measures. They find that countries which favoured job retention schemes such as wage subsidies were more successful in mitigating labour market volatility, while in countries where income support schemes were implemented the job loss rate was higher. Vulnerable employees such as women, youth and less educated workers were affected more negatively than other groups both in terms of higher job loss rate and lower job finding rate. Koczan (2022) studies job losses during the first half of 2020 in 14 emerging and advanced economies and he finds that, compared to advanced economies, in emerging economies job losses are more unequally distributed and they are more concentrated among youth, women and less educated. A large number of studies confirm that the vulnerable groups (such as racial and ethnic minorities, immigrants, women with children, the least educated, etc.) were the ones who showed the strongest job losses (Beland et al., 2020; Casarico & Lattanzio, 2020; Cowen, 2020; Montenovo et al., 2020). Aside from working in more vulnerable sectors, these vulnerable groups cluster more in sectors such as services with high face-to-face and low remote working indices (Soares and Berg, 2021; Montenovo et al.. 2020).

On the other hand, persons who were unemployed at the onset of the crisis, faced large difficulties when they were searching for work. Although in periods of downturns, aggregate job search tends to increase, this was not the case during the COVID-19 crisis (Balgova, 2021; Forsythe et al., 2020a; Hensvik et al, 2021). Evidence on labour demand as measured by new job vacancies provides an additional perspective about the difficulties faced by those who were unemployed when the COVID-19 crisis started or those who lost their jobs during the crisis. At the onset of the COVID-19 crisis there was a dramatic drop in new vacancy postings (Hensvik et al., 2021; Forsythe et al., 2021b; Holgersen et al., 2020). In addition to the lower labor demand, the job search efforts of the unemployed decreased in this initial phase of the pandemic (Balgova, 2021; Forsythe et al., 2020a; Hensvik et al, 2021). The job

search intensity varied over the course of 2020 and 2021 and it depended largely on the containment measures. Lower job search activity is explained by fear of infection, limitations in activities of employment services, benefits receipts, expectations of return to previous employment after the pandemic or limited the availability of parents due to school closures (OECD, 2021, p. 31).

3. Data, variables and sample for the analysis

To analyse the changes in labour market transitions after the first year of pandemic we use Labour Force Survey (LFS) data from 2018 to 2020. LFS provides nationally representative data on the labour market and is conducted on a quarterly basis. The sample for each quarter consists of six rotating groups. Each rotating group is independent representative subsamples of the whole population (SORS, 2020). Each of the groups rotates based on the 2-2-2 system, in which each group is 1) selected into the sample for two quarters, 2) than is out of the sample for the two quarters, and 3) then once again in the sample for two quarters. This, panel structure of the LFS enables us to follow individuals in the same quarters for two consecutive years and record the change in their labour market status. To avoid the seasonality of labour market transitions, we compare the outcomes in the same quarter of two years. Labour market flows are highly seasonal and don't depend only on the overall economic situation (see for instance Blanchard et al. (1990) for the US or Bell & Smith (2002) for the UK).

We analyse the outflows from the initial status (in period *t-1*) towards the final status (in period *t*) (Eurostat 2022). Those who were employed[3] in the period *t-1*, can either 1) remain employed or 2) become unemployed (or inactive). [4] Based on this distinction we define our first dependent variable, the *job loss* [5] - indicator variable that takes the value 1 if the person employed in period *t-1* does not have a job in the period *t*, and value 0 if the person remained employed.

Table 1: Definitions of the main variables

	Status in period *t*		Dependent variable in the transition model
Status *t-1*	Employed	Unemployed	
Employed	Remained employed	Job loss	$P(Unemp_t|Empl_{t-1})$
Unemployed	Job finding	Remained unemployed	$P(Empl_t|Unemp_{t-1})$

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[3] In LFS, employed persons is defined in line with the ILO definition of employed; employed are those who worked at least one hour in the reference week and got paid for that work (in money or in kind), as well as persons who had employment, but who were absent from work that week (SORS, 2021: LFS 2020 report).
[4] Due to the limited sample size and given the relatively long period that we monitor (yearly transitions), we have grouped those who are unemployed and inactive into one group. For the simplicity of the exposition we will label this group as unemployed, while at the same time assuming that inactive are in this group.
[5] This job loss could be due to numerous reasons such as: getting fired, quitting, end of a job contract, etc.

On the other hand, those who were unemployed (or inactive) in period *t-1* can either 1) remain unemployed or 2) become employed. This distinction represents our second dependent variable – *job finding* – indicator variable which takes the value 1 if the person who was unemployed in period *t-1* found the job in period *t*, and value 0 if this person remained unemployed. When used in transition models, these variables are defined as probabilities of job loss and job finding, and formally are defined as P $(Unemp_t|Empl_{t-1})$ and P $(Empl_t|Unemp_{t-1})$.

Since the labour market transitions that occurred between 2019 and 2020, happened during the first year of the pandemic, in the difference-in-differences terminology, they represent the "treatment period". We compare this treatment period to transitions which have occurred between with 2018 and 2019, which represent a "control period", in which the labour market transitions have not been affected by the pandemic. We limit the sample to individuals aged 20 to 64 years.[6]

Total sample for the analysis includes 54,706 individuals, for which we are able to observe both the initial status (in period *t-1*) and the final status (in period *t*). For 33,090 individuals initial status was employed (17,017 in 2018 and 16,073 in 2019), while remaining 21,616 individuals were unemployed (11,686 in 2018 and 9,930 in 2019). The former represent the sample for the estimation of likelihood of losing a job, while the later are the sample for estimating the likelihood of finding a job.

The employment rate for the population 20-64 in 2020 stood at 65.9%, which represents an increase of about 0.5 percentage points (p.p.) when compared to 2019, after the first year of the pandemic. Although the employment rate has not decreased as a consequence of the crises, the increase was lower than when compared to the previous three years in which the rate has increased by about 2 p.p. on average. [7]

Table 2: Transition probabilities in 2019 and 2020

		Transition period (*t-1/t*)	
Variable	Definition	2018/19	2019/20
Likelihood of losing a job	P $(Unemp_t|Empl_{t-1})$	7.0%	7.3%
Likelihood of finding a job	P $(Empl_t|Unemp_{t-1})$	19.2%	16.9%

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[6] The age variable available in LFS is divided into 5-year intervals. We decided not to include the age group 15-19, as the large majority of this group is high-school and although secondary school is not compulsory in Serbia, the enrolment rate in secondary school was 87.5% in 2019 (Statistical Office of the Republic of Serbia, 2021). Therefore the inactivity dominates this group, and the likelihood of their employment is very low, as it is difficult to combine high-school with jobs. On the other hand we opt to include the age group 60-64, although the retirement age for women is 63 (for men it is 65). However, as the majority of this group is still not eligible for old-age retirement, we decide to include them in the analysis.

[7] We limit the period monitored to 2016-2020 as before this period there were changes in the LFS data which make the rates and the numbers non-comparable.

The lower annual increase in employment rates during 2020 than during 2019 is the consequence of both higher likelihood of losing and lower likelihood of finding a job in the first year of the pandemic than in the year before that. The likelihood of losing a job in 2020 for those who were employed in 2019 was 7.3% in 2020, higher by 0.3 p.p. than in the previous period (2018/19) when it stood at 7.0%. On the other hand, the likelihood of finding a job in 2020 for those unemployed in 2019 was 16.9% - a decrease from 19.2% in the previous period (2018/19), or by 2.3 p.p. (Table 2). Therefore, although both indicators suggest negative effects, the stagnation in employment rate results more from lower job finding rate, than from higher job loss rate.

4. The changes in labour market flows of vulnerable groups during the pandemic

4.1. Baseline econometric model

To identify which groups faced the most significant changes in the labour market transitions (i.e. job finding and job loss rates) we use a modified difference-in-differences approach. Our approach can be described as follows. The first difference we investigate is the one between transitions in 2018/2019, which represents the control period and transitions in 2019/2020 which represents the treatment period, i.e. we analyse the changes in transitions after the first year of the pandemic. The second difference we investigate is between vulnerable groups (those more likely to be hit by the pandemic) and their non-vulnerable counterparts, based on their socio-demographic characteristics. In that sense the modification of the diff-in-diff approach is that we do not have a treatment and control group, but rather we compare those who are more likely to be vulnerable to non-vulnerable counterparts. We analyse the difference in changes between age groups (vulnerable: young: 20-29 and old 55-64 workers; prime age: 30-54 non-vulnerable), education levels (vulnerable: primary and secondary; non-vulnerable – tertiary), settlement types (rural – vulnerable; urban – non-vulnerable) and genders (male vs. female, with the latter group being vulnerable). We analyse the differences in transition changes for each of these demographic characteristics separately, while controlling for other relevant factors and use the same baseline model for both likelihood of losing and finding a job. More formally, we estimate the following model:

$$\Delta s_{it} = \beta_0 + vgr'_{it}\beta_1 + \beta_2 T_{19/20} + (vgr_{it} * T_{19/20})'\beta_{12} + X'_{it}\delta + \lambda_a IMR_{ia} + \lambda_b IMR_{ib} + \varepsilon_{it},$$
$$i = 1, ..., n; \ t=18/19, \ 19/20 \ (1)$$

where Δs_{it} represents the dependent variables in our model – transition probability for individual i in the period t. Depending on the initial status this is the likelihood of losing (for employed in t-1) or finding a job (for unemployed in t-1), as presented in Table 1. Indicator variable $T_{19/20}$ takes the value 1 for transitions between 2019 and 2020, and the value 0 for the transitions between 2018 and 2019. In the absence of the interaction terms, coefficient β_2 accounts for the average changes in the likelihood of transitions, when controlling for other relevant factors represented by vector X_{it}. The vector X_{it} contains the above mentioned

demographic characteristics (age, education, settlement and gender) as well as region-fixed effects (NUTS 2 regions[8]), marital status and the number of children. [9]

We estimate the interaction effects for each of the four demographic characteristics separately, by estimating four equations. In each of the equations particular group affiliation is interacted with the time variable $T_{19/20}$ in order to capture the difference in changes in the likelihood of the transition for each group within that characteristics. For example, when we focus on differences in transition changes of different age groups, the term $group_{it}$ represents two indicator variables for prime-age (those aged between 30 and 54 years), and older workers (aged 55-64 years), with young workers (aged 20-29) representing the baseline category. Coefficient β_{12} next to interaction term $group_{it} * T_{19/20}$ represents the difference-in-difference estimator, which captures differences between age groups in transition changes due to pandemic.

Final two terms IMR_{ia} and IMR_{ib} in the equation 1 represent the terms introduced to correct for potential sample selection bias. The first bias (accounted by IMR_{ia} term) accounts for the potential bias that could occur due to sample attrition. Due to the nature of the rotation groups in LFS (see details in section 3) we observe labour market statuses in the same quarter in consecutive years for only about half of individuals. Although each of the LFS rotating groups represents the representative sample of the population, there is a possibility of non-systematic attrition within rotating groups. In order to account for the non-random attrition we perform a Heckman-style correction, and treat potential bias as an omitted variables problem (Heckman, 1979). For both periods (2018/2019 and 2019/2020), we account for the sample attrition by a two-stage correction. In the first stage, we use probit model to estimate the probability that the person will not be interviewed in the same quarters of the consecutive year, conditional on age, sex, district (NUTS 3 level territory identifier), quarter, educational level, marital status and number of children. In the second stage, based on the estimated probability, we compute the inverse Mills ratio (IMR_{ia}) as the ratio of the probability density function to the cumulative distribution function. IMR_{ia} is then added equation (1), and effect of sample attrition λ_a estimated together with other components of the model.

The second sample selection effect is related to the selection into employment. As mentioned previously, when estimating the determinants of job loss, the sample consists of those who were employed in the initial period (*t-1*), while when estimating the determinants of job finding the sample consists of those who were unemployed (or inactive) in the initial period (t-1). As the selection into employment is typically non-random, we correct for potential selection bias in a similar fashion as for sample attrition, by using a two-step Heckman correction (Heckman 1979). In the first step we estimate the probability of employment, separately for each period and gender, conditional on age group, district, quarter, educational

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[8] Belgrade, Vojvodina; South-East Serbia, and West Serbia and Šumadija.
[9] two variables: one for number of children aged between 0 and 4 years and number of children aged between 5 and 10 years. We use these age groups due to the fact that the age variable available in LFS is divided into 5-year intervals.

level, marital status and number of children. In the second stage we compute the inverse Mills ratios (IMR_{ib}) and add it to equation (1), with the effect of employment selection λ_b estimated jointly with other components of the model. The coefficients in equation (1) are estimated by using the probit model, with a Huber/White/sandwich correction for the potential bias in the standard errors (White 1980, 1982).

4.2. Baseline results

The estimates from the equation (1) for the job loss and job finding model are presented in Tables A1 and A2 in the Appendix. As the main focus of our paper are the changes in transition probabilities, we use the estimated coefficients to calculate the marginal effects of time variable ($T_{19/20}$), overall and for each group we analyse. This marginal effect then has the interpretation of the change in the probability of losing and finding a job after the first year of the pandemic.

Tables A1 and A2 and Table 2 consist of five estimations. In the first column (*overall*) we estimate the coefficients from equation (1) without the interaction term to calculate the average change in transition probabilities. In columns 2 to 5, titles of the columns represent the particular variable we are focusing on within that estimation (i.e. particular variable for which the interaction term $group_{it} * T_{19/20}$ in equation (1) represents); as we investigate the differences between groups separately for each characteristic.[10]

Before analysing the main results we briefly turn our attention to the effects of the covariates. The results for both models are in line with the expectations.[11] The results indicate that losing a job (if employed in *t-1*) is more likely for older workers (aged 55 to 64), in urban areas, among men, singles, and those with children aged 0 to 4 years and less likely in Western Serbia. While attrition selection has no impact on losing a job, employment selection has a positive effect, indicating, as expected, that losing a job is more likely for the person with the lower probability of being employed in *t-1* (Table A1, column *overall*).[12] On the other hand, the likelihood of finding a job (if unemployed in *t-1*) decreases with age, is more likely in Belgrade and urban areas, for women and married persons. Inverse Mills ratio for employment selection has a positive effect, indicating, again as expected, that finding a job is more likely persons with the higher probability of being employed (in the pool of unemployed in year t-1). The effect of attrition selection is significant and indicates that those with lower likelihood of attrition are more likely to find a job (Table A2, column *overall*).

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[10] As a robustness check of the analysis we include all the interactions at the same time. Results suggest that there are no significant changes in the results (Tables A1 and A2 in the appendix, column 6 – *Simultaneous*).

[11] For this paragraph we use the results from column *all* of tables A1 and A2. In this column we investigate the effect demographic chacterstics without interaction, i.e. the average effects of each of the variable regardless of the period in which transition occurred).

[12] Inverse Mills ratio, as the name suggest can approximately be viewed as an approximation of the inverse of the probability of being employed. In other words, the probability of being employed and IMR are strongly negatively correlated.

We now return to our main focus of interest: the changes in transition probabilities between the years and differential effects between the groups. Table 3 (column *overall*) indicates that, ceteris paribus, the likelihood of losing a job increased during the first year of the pandemic, by about 0.6 percentage points (p.p.), albeit this coefficient is only marginally significant. On the other hand, the likelihood of finding a job decreased by 2.9 p.p. in the same period (Table 3, panel 2). Therefore, the results indicate that stagnation in employment growth in Serbia resulted from both increase in the likelihood of losing and decrease in the likelihood of finding a job, with the effect on the latter being much more prominent. This was already suggested in descriptive statistics presented in Table 2, but in this case we account for the potential changes in the characteristics of the labour force between the years.

Table A1 in the Appendix suggests that there is a significant diff-in-diff effect for age groups, while we find no evidence of differences in effects for education groups, settlement types and genders. With regards to age groups, likelihood of losing a job increased significantly for young people (by 1.9 p.p.), while there were no significant changes for prime-age and older workers (Table 3). We also find that the likelihood of losing a job increased slightly more for workers with primary education (by 1.1 p.p.), and from rural areas (by 0.7 p.p.), than for their counterparts, although these effects are only marginally significant and diff-in-diff coefficients in Table A1 are not significant. The increase in likelihood of losing a job males and females is approximately equal, however it doesn't reach the significance level as the model with interaction term reduces the power of the period ($T_{19/20}$) variable.

Table 3: Changes in the probabilities of losing and finding a job (marginal effects, percent change) by overall and for different groups

Panel 1: Change in probability of losing a job (n= 33,090)				
1	2	3	4	5
overall	**Age**	**Education**	**Settlement**	**Sex**
	20-29	**Primary**	**Rural**	**Male**
0.006*	0.019***	0.011*	0.007*	0.006
(0.003)	(0.007)	(0.007)	(0.004)	(0.004)
	30-54	**Secondary**	**Urban**	**Female**
	0.000	0.004	0.004	0.005
	(0.004)	(0.004)	(0.004)	(0.004)
	55-64	**Tertiary**		
	0.009	0.006		
	(0.006)	(0.006)		

Panel 2: Change in probability of finding a job (n= 21,616)				
overall	**Age**	**Education**	**Settlement**	**Sex**
	20-29	**Primary**	**Rural**	**Male**
-0.029***	-0.023*	-0.039***	-0.047***	-0.040***
(0.005)	(0.013)	(0.010)	(0.008)	(0.008)
	30-54	**Secondary**	**Urban**	**Female**
	-0.033***	-0.027***	-0.015**	-0.020***
	(0.009)	(0.006)	(0.006)	(0.007)
	55-64	**Tertiary**		

-0.028***	-0.016
(0.007)	(0.015)

Coefficients represent marginal effects calculated based on the probit model. Robust standard errors in parenthesis. Full estimation results available in table Table A1 and A2 in the Appendix. *** p<0.01, ** p<0.05, * p<0.1.

On the other hand, we find that COVID-19 pandemic had different impact on job finding for educational and settlement groups, while for age and gender the differences are insignificant (Table A2 in the Appendix). The decrease in the likelihood of finding a job was the strongest for workers with primary (by 3.9 p.p.), then for secondary education (by 2.7 p.p.), while for those with tertiary education the change was not significant. The first year of COVID-19 pandemic had a higher impact on the rural than among in urban areas. The decrease in the likelihood of finding a job in rural areas was 4.7 p.p while in urban it stood at 1.5 p.p. Although diff-in-diff effect is not significant (Table A2), it should be noted that the decrease in likelihood of finding a job was observed in all three age groups, and among both men and women.

The baseline results suggest that the effects of the COVID-19 crisis in Serbia had a stronger impact on the probability of finding a new job, than on losing existing work. Probability of finding a job decreased practically for all the groups investigated (apart for persons with tertiary education), but it was particularly pronounced among those with primary education and in rural areas. On the other hand, young workers (20-29) faced the highest increase in the likelihood of job loss, with low-educated workers and workers rural areas also having higher transitions out of work than in the previous year. In the next two sections we analyse these changes in more detail by exploring how the fact that vulnerable groups work more frequently in vulnerable jobs can explain these changes in transitions.

5. Vulnerable jobs as determinants of job losses of vulnerable groups during the pandemic

In the previous part of the analysis we have presented evidence that COVID-19 pandemic has increased the likelihood of losing a job in Serbia. On average, this increase was not large – by 0.6 p.p., however it was more prominent for some vulnerable groups, such as youth, workers with primary education, and workers from rural areas (Table 3, Panel 1). As mentioned in the literature review, one of the main reasons why these vulnerable groups could be more vulnerable in the times of the economic downturn is the fact that they work more frequently in vulnerable jobs, such as informal employment or temporary contracts. They are also more likely to work in the sectors which were under the greater impact of the restriction measures.

In this section we investigate if the increases in job losses of vulnerable groups due to COVID-19 can be explained by their employment status, type of contract, firm size and sector of activity. To that end, we extend the equation (1) to include the vector of job

characteristics (job_char_{it}) and its interaction with the time variable ($T_{19/20}$). The extended model for the estimation of likelihood of job loss now reads:

$$\Delta s_{it} = \beta_0 + group'_{it}\beta_1 + \beta_2 T_{19/20} + (group_{it} * T_{19/20})'\beta_{12} + job\_char'_{it}\beta_3 + \\ (job\_char_{it} * T_{19/20})'\beta_{13} + X'_{it}\delta + \lambda_a IMR_{ia} + \lambda_b IMR_{ib} + \varepsilon_{it},$$

$$i = 1, ..., n; \ t=18/19, \ 19/20 \ (2)$$

The interaction term $job\_char_{it} * T_{19/20}$ and associated coefficents β_{13} account for the changes in job losses during COVID-19 pandemic that can be associated with different job characteristics. This term will enable us to identify which groups of workers were particularly hit during the crisis. On the other hand, if the increase in job loses for vulnerable groups (youth, low-educated and rural areas) can be explained by the fact that they work in more vulnerable jobs, marginal effects β_{12} estimated based on the equation (2) will be lower than those estimated based on equation (1), where we do not include job characteristics.

The vector of job characteristics (job_char_{it}) includes three sets of indicator variables, which enter the equation (2) simultaneously. The first set accounts for the impact of different professional statuses and contract types, which are represented in the multinominal variable *status*. This variable accounts for the 8 different employment/contract type statuses: 1) permanent formal wage employment (baseline category); 2) formal self-employment 3) formal farmers; 4) temporary formal wage employment; 5) informal wage employment; 6) informal self-employment; 7) informal farmers and 8) contributing family members. Compared to the permanent formal wage employment all other statuses are expected to have higher vulnerability. The second set of indicator variables accounts for the impact of working in different sectors and comprises of 18 variables which correspond to NACE classification.[13] Finally, the third set comprises of only one variable which accounts for the firm size, distinguishing between medium and large firms (11 or more employees) and small firms (10 employees or less). [14]

Results of the estimation of the equation (2) are presented in Table A3 in the Appendix. Before analysing if job characteristics can account for some of the observed effects on vulnerable groups, we analyse how COVID-19 impacted job losses of workers with different job characteristics. In order to present these results more clearly[15] we calculate the marginal

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[13] Two sectors: Sector L (Real estate activities) and Sector U (Activities of extraterritorial organizations and bodies) had insufficient number of respondents for reliable estimations of their independent effects. They were incorporated into sectors K (Financial and Insurance Activities) and S (Other Service Activities), respectively. Sector A (Agriculture, Forestry and Fishing) serves as a baseline sector for the analysis.
[14] Although there is a more differentiated scale on firm size in LFS, the respondents have options for answers: "don't know, but more than 11 employees" and "don't know but less than 10 employees". In order to include all of the respondents, we opted for using only one indicator variable in line with these answers, while other answers are recoded in line with them.
[15] The results indicate that noumerous interactions of time and job characteristics (i.e. variables within the $job\_char_{it} * T_{19/20}$ vector) are significant (Table A3, column 1) as they differ from the baseline coefficent. Column 1 of Table A3 presents the results of estimation of the equation (2) without the term $group_{it} * T_{19/20}$;

effects of the variable $T_{19/20}$ for each job characteristics and present them in Table A4 in the Appendix). The marginal effects represent the change in the likelihood of job loss in the first year of the pandemic for workers with each job characteristic.

The results indicate that COVID-19 had the highest impact on workers in informal wage employment, as their likelihood of losing a job in the first year of the pandemic increased by 4.1 percentage points. On the other hand, those who worked in formal self-employment had marginally lower likelihood of losing a job, likely due to generous wage subsidies towards MSMEs within the COVID-19 relief package.[16] On the other hand, from sectorial perspective, the first year of the pandemic increased job losses in sectors: Transport, Accommodation and Food Services; Arts, Entertainment and Recreation; and Other service activities. In these four sectors the likelihood of losing a job increased by about 4 p.p. when compared to the previous year. Finally, we do not observe any changes in the likelihood of losing a job for workers from small and medium and large firms.

Table A5 in the Appendix indicates that young workers, workers with primary education and from rural areas are more likely than their counterparts to work as informal wage workers, and less likely to be in formal self-employment. In addition, young workers are also more likely to work in Accommodation and Food Service and Arts, Entertainment and Recreation sectors, while rural workers are less likely to work in all the sectors which are hit by the pandemic. This indicates that young workers and workers with primary education were indeed more likely to work in sectors and jobs that had more job losses during the first year of the pandemic. This should, at least partially, account for their higher job losses during the first year of the pandemic. On the other hand, the impact on rural workers is mixed, as they are more likely to work in jobs that were hit more by the pandemic, but less likely to work in sectors that were hit more by the pandemic.

Table 4: Changes in the probabilities of losing a job (marginal effects, percent change) in the models without and with interactions with job characteristics

Model without interactions with job characteristics			Model with interactions with job characteristics		
1	2	3	4	5	6
Age	**Education**	**Settlement**	**Age**	**Education**	**Settlement**
20-29	**Primary**	**Rural**	**20-29**	**Primary**	**Rural**
0.019***	0.011*	0.007*	0.012**	0.008	0.007**
(0.007)	(0.007)	(0.004)	(0.006)	(0.006)	(0.004)
30-54	**Secondary**	**Urban**	**30-54**	**Secondary**	**Urban**
0.000	0.004	0.004	-0.001	0.002	0.000

i.e. without the interactions of the time variable with any of the demographic determinants (age, education, gender and settlement).

[16] We also observe increased likelihood of losing a job for formal agriculture workers by 1.9 percentage points. However, this result is probably a statistical artifact, since the sectoral marginal effects (also presented in table A4) suggest that there is decrease in likelihood of losing a job if workin in sector A - Agriculture, Forestry and Fishing, which significantly overlaps with the formal agriculture worker category. Separate marginal effects estimations of the effects of status and sector (available upon request) confirm this, as neither formal agriculture workers nor workers Agriculture, Forestry and Fishing have significant changes in the likelihood of firing.

(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
55-64	**Tertiary**		**55-64**	**Tertiary**	
0.009	0.006		0.009	0.004	
(0.006)	(0.006)		(0.006)	(0.008)	

*** p<0.01, ** p<0.05, * p<0.1. Coefficients represent marginal effects calculated based on the probit model. Robust standard errors in parenthesis. Full estimation results available in table Table A3 in the Appendix.

To estimate how much of the increased job losses for identified vulnerable groups can be explained by job characteristics, in Table 4, we compare the changes in job losses calculated based on equation 1, where we do not control for job characteristics and equation 2, where job characteristics are included. Table 4 indicates that out of 1.9 p.p. of the increased likelihood of losing a job for young workers, about one-third (0.7 p.p.) is due to working in more vulnerable jobs and sectors. The unexplained part of the increase in job loss for younger workers (1.2 p.p.), can be due to their low working experience and tenure; which lowers the costs of their dismissals for employers in terms of lower severance payments and lost employee training. [17]

For workers with primary education, the marginally significant increase in job losses in the first year of pandemic were reduced to insignificant levels when sectors and statuses were controlled for. For workers from rural areas, although the coefficient remained unchanged it increased its significance, as the higher risks of them losing a job due to more vulnerable statuses are compensated by working less frequently in vulnerable sectors.

6. Job characteristics and lower likelihood of finding a new job

Results from the section 4 suggest that the effects of the COVID-19 crisis in Serbia had a stronger impact on decreasing creation of new jobs, than on increasing job losses. Transitions from unemployment to employment decreased practically for all the groups investigated, but it was particularly pronounced among those with primary education and rural areas. In this section we analyse for which statuses and sectors this decrease was the highest, and how these decreases were distributed among the identified vulnerable groups. [18]

To that end, we extend the equation (1) to study to study transitions from unemployment to different employment statuses, firm sizes and sectors:

$$\Delta s_{kit} = \beta_0 + group'_{kit}\beta_1 + \beta_2 T_{19/20} + (group_{kit} * T_{19/20})'\beta_{12} + X'_{kit}\delta + \lambda_a IMR_{kia} + \lambda_b IMR_{kib} + \varepsilon_{kit},$$

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[17] This conclusion could not formally be confirmed as the age groups and working experience are significantly correlated, so including both variables in the equation 2 would cause multicolinearity.
[18] Higher vulnerability of these groups is due to the fact that about two thirds of the overall decrease in new jobs can contributed to lower transitions from unemployment to the sector of Agriculture, which dominates the jobs in rural areas and among those with low education.

$$k= 0, 1, ..., K; = 1, ..., n; t=18/19, 19/20 \quad (3)$$

Compared to equation (1), equations (3) differs only in the nature of the dependent variable. Here, the dependent variables Δs_{kit}, are multinominal, and K represents different a) employment statuses (8 categories), b) firm sizes (2 categories) and 3) sectors (10 categories) a person can transition in the year t from unemployemnt in the year $t-1$. Therefore, we estimate 3 equations for each of the multinominal variables, with the baseline category ($k=0$) in all equations representing persons who were unemployed in year $t-1$ and remain unemployed in year t. We use three dependent variables to analyse differences in finding jobs in different statuses, firm sizes and sectors[19]. These variables are already described in section 5. Given the multinominal nature of the dependent variable, we estimate three sets of equations, where K is the number of equations to be estimated within each set[20],. As before, as we are interested in changes in transition probabilities, and we use the estimated coefficients to calculate the marginal effects of time variable ($T_{19/20}$), overall and for the different groups. Due to the large number of estimated equations, in Table 5 we present only the estimated marginal effects. [21] Marginal effects have the interpretation of the change, after the first year of the pandemic, in the probability of finding a job in particular status, firm size and sector.

Essentially, by estimating the equation 3 we are decomposing the overall effect of the pandemic on job finding rate (estimated based on the equation 1), to different statuses, firm sizes and sectors. In other words the sum of the changes in transitions from unemployment to employment in different statuses (or sectors) should roughly be equal to the overall estimated change in the job finding rate.

As we presented in Table 3, the overall decrease in job finding rate after the first year of the pandemic was 2.9 percentage points (p.p.). By status, the biggest decreases in job finding were recorded among formal farmers, temporary workers and informal wage employees – in all groups by about 0.6 p.p. (column *overall* in table 5). From the sectoral perspective, the biggest decreases were recorded in the Agriculture sector, which accounts for about half of the decrease (1.5 p.p. out of 2.9 p.p. decrease); additionally lower number of new jobs were available in Manufacturing, Transport, Accommodation and Food sector and Other services. Finally, lower job availability was more prominent in small firms (by 1.8 p.p.) than in medium or large firms (by 1 p.p.).

While practically all the groups were hit by lower availability of jobs in Agriculture sector, this was particularly important for those with primary education and youth, as it accounts for

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[19] Due to small number of transitions into sectors we group the sectors into 10 categories. Sectors B (Mining), D (Electricity and Gas) and E (Water, Sewerage, and Waste) are grouped with sector C (Manufacturing), sectors K and L (Finance and Real estate), R (Arts and recreation) and U (Activities of Extraterritorial Organisations) are jointed with sector S (other services sector), while sectors M and N (Professional and Administrative services) are joined with sector I (Information and Communication).

[20] For status $K=8$, for firm size $K=2$, and for sector $K = 10$.

[21] The number of groups for which equations for each variable is 5 (overall, age, education, settlement and gender interaction). Therefore the overall number of estimated equations is $K*5 = 60$.

almost their entire decrease in transitions to employment (primary: 3.3 out of 3.9 p.p. and youth 2.1 out of 2.3 p.p.). Interestingly, only about half of the lower job availability for rural population can be explained by Agriculture sector (2.5 out of 4.7 p.p.), while lower job availability in these areas was also recorded in Trade and in Accommodation and food sectors. Other groups also had more diverse sectorial losses in job finding rates.

From the status perspective, interesting trends are observed for youth, who were less likely to find jobs in informal wage employment, while for those with primary education the drop is split between informal wage employment and working as farmers in formal employment. On the other hand, in rural areas it was more difficult to find jobs in practically all statuses we analyse.

Table 5: Changes in the likelihood of transitions from unemployment to different employment statuses firm sizes (upper panel) and sectors (lower panel) between 18/19 and 19/20, overall and for different groups (in percentage points)

	Eq 1	Eq 3a: Δs_{kit} = status								Eq 3b: Δs_{kit} = size	
	Job finding rate	Formal perm wage empl	Formal self empl	Formal farmer	Formal temporary	Informal wage	Informal self empl	Informal farmer	Cont fam member	Small firms	Medium and large firms
overall	-0.029***	-0.003*	-0.001	-0.006***	-0.007**	-0.006**	-0.003*	-0.001	-0.001	-0.018***	-0.010***
youth	-0.023*	0.005	0	-0.004	-0.004	-0.015***	0.001	0	-0.001	-0.005	-0.019*
prime age	-0.033***	-0.006*	0	-0.005	-0.007*	-0.007*	-0.008**	-0.007	0.003	-0.022***	-0.011***
old	-0.028***	-0.005*	-0.003*	-0.008***	-0.007*	-0.001	-0.002	0.003	-0.005*	-0.022***	-0.004
primary	-0.039***	-0.006	0.003**	-0.014***	0.004	-0.015***	-0.001	-0.002	-0.003	-0.031***	-0.005
secondary	-0.027***	-0.005*	-0.002	-0.003	-0.010***	-0.003	-0.004**	0.001	0	-0.012**	-0.014***
tertiary	-0.019	0.004	-0.003	0.004	-0.008	-0.003	-0.001	-0.007	-0.005	-0.018	0
rural	-0.047***	-0.007**	-0.002*	-0.011***	-0.010**	-0.008**	-0.006**	0.004	-0.005	-0.032***	-0.015***
urban	-0.015**	-0.001	0.001	-0.002	-0.005*	-0.003	-0.001	-0.005*	0.001	-0.008	-0.006
male	-0.040***	-0.005*	-0.003*	-0.006*	-0.010***	-0.008**	-0.007*	-0.002	0.003	-0.023***	-0.015***
female	-0.020***	-0.002	0.001	-0.006**	-0.004	-0.004	-0.001	0	-0.004*	-0.015**	-0.005
obs	21,616	21,616								21,616	

	Eq 1	Eq 3c: Δs_{kit} = sector									
	Job finding rate	Agriculture	Manufacturing	Construction	Trade	Transport	Accomm. and Food	Inf. and Comm.	State sector	Other services	Activities of hhs
overall	-0.029***	-0.015***	-0.005*	-0.001	-0.002	-0.003**	-0.003**	0	-0.002	-0.003*	0.001
youth	-0.023*	-0.021***	-0.007	-0.007	0.008	-0.004	-0.007	0.003	-0.001	-0.001	0.006*
prime age	-0.033***	-0.012**	-0.005	-0.001	-0.006*	-0.002	-0.003	-0.001	-0.002	-0.003	-0.003
old	-0.028***	-0.017***	-0.003	0.002	-0.002	-0.003*	-0.003	-0.002	-0.003	-0.004*	0.003
primary	-0.039***	-0.033***	0.002	0.002	0.001	0	-0.001	-0.001	0	-0.003	-0.001
secondary	-0.027***	-0.008**	-0.008**	-0.001	-0.004	-0.004**	-0.005***	0	-0.003*	-0.002	0.002
tertiary	-0.019	-0.01	-0.002	-0.003	0.002	-0.002	0.001	-0.004	0.001	-0.008	0.003
rural	-0.047***	-0.025***	-0.006	-0.002	-0.009***	-0.003	-0.005**	-0.003	-0.003	-0.004*	0.004*
urban	-0.015**	-0.008**	-0.004	0	0.003	-0.003	-0.002	0.002	-0.001	-0.002	-0.004
male	-0.040***	-0.017***	-0.008**	0	-0.002	-0.006***	-0.004**	-0.004**	0.001	-0.002	-0.001
female	-0.020***	-0.014***	-0.001	-0.002*	-0.002	0	-0.003	0.003**	-0.006**	-0.003*	0.003
obs	21,616	21,616									

*** p<0.01, ** p<0.05, * p<0.1. Coefficients represent marginal effects calculated based on the probit (overall) and mprobit estimations (columns status and firm size). Robust standard errors and estimation results available from the authors.

Notes: Column *Eq1: Job finding rate* represents the change in the likelihood of transition from unemployment to employment (the job finding rate) from 18/19 to 19/20 estimated within equation (1), where the dependent variable is binary (0 = remains unemployed; 1 = transition to employment).

Column *Eq 3a: Δs_{kit} = status* represents the change of in the likelihood of the transition from unemployment to different employment statuses, where the dependent variable is a multinominal variable status with 9 categories (0 = remains unemployed; 1-8 = transition to different statuses).

Column *Eq 3b: Δs_{kit} = firm size* represents the change of in the likelihood of the transition from unemployment to employment in different firm sizes, where the dependent variable is a multinominal variable status with 3 categories (0 = remains unemployed; 1 = small firm; 2 = medium or large firm).

Column *Eq 3b: Δs_{kit} = firm size* represents the change of in the likelihood of the transition from unemployment to employment in different firm sizes, where the dependent variable is a multinominal variable status with 3 categories (0 = remains unemployed; 1 = small firm; 2 = medium or large firm).

7. Discussion and conclusions

In this paper, we have analysed the changes that occurred in the labour market transitions of the vulnerable groups in Serbia during the first year of the pandemic. Unlike previous studies which focused on short-term transitions within the first months of the pandemic, we expand the time frame of the analysis to one year and apply a difference in difference approach by comparing the transitions in the 2019/20 period to the period before the pandemic – 2018/19. Furthermore, unlike previous papers, we systematically compare vulnerable groups' job losses or job finding during the first year of pandemic and explore the role of vulnerable groups' job characteristics in these transitions.

The results indicate that COVID-19 caused stagnation in employment growth, resulting from increases in job losses and decreases in the chances of finding a job. The job loss rate increased by 0.6 percentage points (p.p.), while the job-finding rate decreased by 2.9 p.p., suggesting that the latter effect is much more prominent. This finding indicates that while some workers lost their jobs, most of the impact of the COVID-19 was due to lower transitions into employment. Lower transitions into employment are likely to be the consequence of two factors: lower job vacancies and decreases in job search intensity (Hensvik et al., 2021; Forsythe et al., 2021b; Balgova, 2021).

Although on average, the increase in the likelihood of job loss was not high, young workers (20-29) faced a rise in the job loss rate of 1.9 p.p. during the first year of the pandemic. Our results suggest that this increase can partially be explained by their higher shares in informal wage employment, which were not protected by contracts, and in "non-essential" sectors, such as hospitality, arts, recreation, etc., which indeed had a higher likelihood of job loss. However, controlling for sector and employment status cannot fully explain the youth's increased job losses, so it is likely that their low working experience and tenure, which lowers the costs of their dismissals, also played a role.

Lower transitions into employment were observed for all subgroups (apart from those with tertiary education), but they were particularly pronounced among those with primary education and in rural areas. Lower transitions to employment were mainly caused by lower job availability in the agriculture sector, particularly for youth and low-educated. Although agriculture was not perceived as a sector under high risk, it seems that the lockdown measures particularly impacted the creation of new jobs in this sector. This is in line with findings obtained from an independent survey, which indicated that about 31% of the job seekers during the pandemic faced difficulties to find seasonal or occasional work that they were able to perform before the pandemic (IES, 2022). For many of these workers, employment is primarily transitory, so after completing one job, they look for another. In that sense, the pandemic has put a significant hurdle in their usual labour market dynamics.

From a wider policy perspective, jobs of informal and formal temporary workers were not in the focus of measures to preserve employment. As these jobs are typically performed by youth, low-educated and workers from rural areas, which already had lower employment

rates, the COVID-19 pandemic has exuberated their vulnerability. The income stability of these workers could have been preserved to a greater extent by additional income support measures. While it is difficult to target these groups, one mechanism in the short term could be to temporarily grant financial support to all unemployed persons registered with the National employment service or provide temporary public sector jobs through public works or other activities that produce public goods or services during the pandemic. Although these measures could be rather costly, the government has implemented almost universal employment retention measures towards preserving permanent employment (all sectors aside from the financial sector were included). However, it was clear that some industries such as IT, communications, construction or others will be under the lower impact of the COVID-19 crisis. Therefore, better targeting of assistance towards permanent employment could have provided funds to finance programmes targeting vulnerable jobs and preventing further deterioration of the vulnerable group's position.

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Appendix

Table A1 Estimation of the baseline model - likelihood of losing a job

	1	2	3	4	5	6
VARIABLES	all	Age	Education	Settlement	Sex	Simulta-neous
$T_{19/20}$	0.043**	0.143**	0.079	0.058*	0.044	0.194**
	(0.021)	(0.056)	(0.049)	(0.032)	(0.029)	(0.080)
Aged 30-54*$T_{19/20}$		-0.141**				-0.145**
		(0.064)				(0.064)
Aged 55-64*$T_{19/20}$		-0.081*				-0.093
		(0.058)				(0.070)
Secondary*$T_{19/20}$			-0.051			-0.051
			(0.056)			(0.060)
Tertiary*$T_{19/20}$			-0.027			-0.019
			(0.068)			(0.074)
Urban*$T_{19/20}$				-0.029		-0.018
				(0.043)		(0.046)
Female*$T_{19/20}$					-0.003	-0.000
					(0.043)	(0.043)
Aged 30-39	-0.034	0.038	-0.034	-0.034	-0.034	0.039
	(0.040)	(0.051)	(0.039)	(0.039)	(0.039)	(0.051)
Aged 55-64	0.125***	0.168***	0.126***	0.125***	0.125***	0.174***
	(0.042)	(0.055)	(0.042)	(0.042)	(0.042)	(0.055)
Secondary	-0.032	-0.032	-0.007	-0.032	-0.032	-0.007
	(0.030)	(0.031)	(0.042)	(0.031)	(0.031)	(0.043)
Tertiary	-0.060	-0.059	-0.047	-0.060	-0.060	-0.051
	(0.042)	(0.043)	(0.055)	(0.043)	(0.043)	(0.056)
SE Serbia	-0.047	-0.047	-0.047	-0.048	-0.047	-0.046
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
Vojvodina	-0.031	-0.031	-0.031	-0.032	-0.031	-0.031
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
W serbia	-0.083***	-0.083**	-0.083**	-0.084***	-0.083**	-0.083**
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
Urban	0.158***	0.157***	0.158***	0.172***	0.158***	0.166***
	(0.023)	(0.024)	(0.024)	(0.032)	(0.024)	(0.033)
Female	-0.103***	-0.104***	-0.103***	-0.103***	-0.102***	-0.103***
	(0.025)	(0.025)	(0.025)	(0.025)	(0.033)	(0.033)
Married	-0.090***	-0.089***	-0.090***	-0.089***	-0.090***	-0.089***
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
N of children (0-4)	0.029**	0.029**	0.029**	0.029**	0.029**	0.029**
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
N of children (5-9)	0.001	0.001	0.001	0.001	0.001	0.001
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
IMR_a	0.193	0.209	0.196	0.191	0.193	0.214
	(0.142)	(0.141)	(0.141)	(0.141)	(0.141)	(0.141)
IMR_b	0.803***	0.805***	0.802***	0.803***	0.803***	0.804***
	(0.056)	(0.055)	(0.055)	(0.055)	(0.055)	(0.055)
Constant	-2.083***	-2.153***	-2.104***	-2.089***	-2.084***	-2.182***
	(0.173)	(0.175)	(0.174)	(0.172)	(0.172)	(0.178)
Observations	33,090	33,090	33,090	33,090	33,090	33,090

Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A2 Estimation of the baseline model - likelihood of finding a job

VARIABLES	1 all	2 Age	3 Education	4 Settlement	5 Sex	6 Simultaneous
$T_{19/20}$	-0.117***	-0.075*	-0.156***	-0.172***	-0.153***	-0.191***
	(0.021)	(0.043)	(0.041)	(0.030)	(0.031)	(0.067)
Aged 30-54*$T_{19/20}$		-0.048				-0.045
		(0.054)				(0.055)
Aged 55-64*$T_{19/20}$		-0.060				-0.055
		(0.056)				(0.057)
Secondary*$T_{19/20}$			0.045			0.042
			(0.049)			(0.049)
Tertiary*$T_{19/20}$			0.091*			0.087
			(0.052)			(0.054)
Urban*$T_{19/20}$				0.107***		0.102**
				(0.041)		(0.042)
Female*$T_{19/20}$					0.066	0.075
					(0.041)	(0.045)
Aged 30-39	-0.179***	-0.158***	-0.178***	-0.179***	-0.179***	-0.158***
	(0.036)	(0.044)	(0.037)	(0.037)	(0.037)	(0.044)
Aged 55-64	-0.457***	-0.428***	-0.454***	-0.457***	-0.457***	-0.430***
	(0.037)	(0.045)	(0.037)	(0.037)	(0.037)	(0.045)
Secondary	-0.033	-0.034	-0.053	-0.034	-0.033	-0.044
	(0.026)	(0.026)	(0.034)	(0.026)	(0.026)	(0.034)
Tertiary	-0.017	-0.018	-0.058	-0.018	-0.016	-0.039
	(0.042)	(0.041)	(0.053)	(0.041)	(0.041)	(0.053)
SE Serbia	0.179***	0.180***	0.180***	0.180***	0.179***	0.181***
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
Vojvodina	0.147***	0.147***	0.147***	0.148***	0.147***	0.148***
	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)
W serbia	0.127***	0.126***	0.126***	0.128***	0.127***	0.128***
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
Urban	-0.252***	-0.252***	-0.252***	-0.299***	-0.252***	-0.298***
	(0.021)	(0.021)	(0.021)	(0.028)	(0.021)	(0.028)
Female	-0.133***	-0.132***	-0.133***	-0.133***	-0.163***	-0.166***
	(0.024)	(0.024)	(0.024)	(0.024)	(0.030)	(0.031)
Married	0.055**	0.055**	0.055**	0.055**	0.056**	0.055**
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
N of children (0-4)	-0.020	-0.020	-0.019	-0.020	-0.020	-0.020
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
N of children (5-9)	-0.007	-0.007	-0.007	-0.007	-0.006	-0.007
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
IMRa	0.464***	0.476***	0.475***	0.465***	0.468***	0.485***
	(0.132)	(0.133)	(0.133)	(0.133)	(0.133)	(0.134)
IMRb	-0.557***	-0.560***	-0.558***	-0.558***	-0.556***	-0.560***
	(0.045)	(0.045)	(0.045)	(0.045)	(0.045)	(0.045)
Constant	-0.531***	-0.560***	-0.526***	-0.507***	-0.520***	-0.520***
	(0.161)	(0.165)	(0.164)	(0.164)	(0.164)	(0.167)
Observations	21,616	21,616	21,616	21,616	21,616	

Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A3 Estimation of the extended - likelihood of losing a job (equation 2)

VARIABLES	1 No demographics		2 Age		3 Education		4 Settlement		5 Sex	
$T_{19/20}$	-0.293**	(0.125)	-0.193	(0.140)	-0.258*	(0.134)	-0.272**	(0.127)	-0.304**	(0.126)
Aged 30-54*$T_{19/20}$			-0.132*	(0.068)						
Aged 55-64*$T_{19/20}$			-0.059	(0.075)						
Secondary*$T_{19/20}$					-0.054	(0.065)				
Tertiary*$T_{19/20}$					-0.039	(0.083)				
Urban*$T_{19/20}$							-0.055	(0.050)		
Female*$T_{19/20}$									0.028	(0.049)
for SE*$T_{19/20}$	-0.131	(0.109)	-0.131	(0.109)	-0.130	(0.109)	-0.128	(0.109)	-0.126	(0.110)
for agr*$T_{19/20}$	0.419**	(0.169)	0.401**	(0.170)	0.412**	(0.170)	0.406**	(0.170)	0.423**	(0.169)
for temp*$T_{19/20}$	0.063	(0.062)	0.048	(0.063)	0.063	(0.062)	0.060	(0.062)	0.064	(0.062)
inf wage*$T_{19/20}$	0.204**	(0.095)	0.194**	(0.095)	0.199**	(0.096)	0.202**	(0.095)	0.206**	(0.095)
inf se*$T_{19/20}$	-0.039	(0.111)	-0.041	(0.111)	-0.047	(0.112)	-0.042	(0.111)	-0.032	(0.112)
inf agr*$T_{19/20}$	0.092	(0.167)	0.072	(0.168)	0.081	(0.168)	0.075	(0.168)	0.097	(0.167)
cfm*$T_{19/20}$	0.255	(0.164)	0.234	(0.164)	0.243	(0.165)	0.241	(0.165)	0.244	(0.166)
sizefirm*$T_{19/20}$	-0.005	(0.062)	-0.007	(0.062)	-0.005	(0.062)	-0.002	(0.062)	-0.004	(0.062)
Sector B*$T_{19/20}$	0.554**	(0.257)	0.541**	(0.257)	0.565**	(0.257)	0.563**	(0.257)	0.560**	(0.257)
C*$T_{19/20}$	0.298**	(0.126)	0.292**	(0.126)	0.308**	(0.126)	0.307**	(0.126)	0.296**	(0.126)
D*$T_{19/20}$	0.069	(0.252)	0.064	(0.253)	0.081	(0.253)	0.083	(0.253)	0.071	(0.252)
E*$T_{19/20}$	0.423*	(0.222)	0.423*	(0.221)	0.424*	(0.222)	0.437**	(0.222)	0.426*	(0.222)
F*$T_{19/20}$	0.305**	(0.137)	0.303**	(0.137)	0.312**	(0.137)	0.314**	(0.138)	0.312**	(0.138)
G*$T_{19/20}$	0.194	(0.131)	0.192	(0.132)	0.207	(0.132)	0.211	(0.132)	0.187	(0.132)
H*$T_{19/20}$	0.533***	(0.148)	0.530***	(0.148)	0.545***	(0.148)	0.546***	(0.148)	0.537***	(0.148)
I*$T_{19/20}$	0.471***	(0.156)	0.458***	(0.156)	0.485***	(0.157)	0.489***	(0.157)	0.466***	(0.157)
J*$T_{19/20}$	0.451**	(0.197)	0.442**	(0.198)	0.463**	(0.199)	0.478**	(0.198)	0.451**	(0.197)
K*$T_{19/20}$	0.387*	(0.222)	0.388*	(0.221)	0.397*	(0.224)	0.414*	(0.223)	0.380*	(0.222)
M*$T_{19/20}$	0.182	(0.149)	0.179	(0.149)	0.183	(0.149)	0.187	(0.149)	0.172	(0.150)
N*$T_{19/20}$	0.341*	(0.184)	0.330*	(0.184)	0.352*	(0.186)	0.367**	(0.185)	0.337*	(0.184)
O*$T_{19/20}$	0.418**	(0.175)	0.413**	(0.175)	0.425**	(0.175)	0.435**	(0.175)	0.414**	(0.175)
P*$T_{19/20}$	0.287*	(0.159)	0.281*	(0.159)	0.296*	(0.161)	0.305*	(0.160)	0.283*	(0.160)
Q*$T_{19/20}$	0.229	(0.158)	0.225	(0.158)	0.233	(0.161)	0.248	(0.159)	0.217	(0.160)
R*$T_{19/20}$	0.155	(0.162)	0.149	(0.162)	0.165	(0.163)	0.171	(0.163)	0.143	(0.165)
S*$T_{19/20}$	0.566***	(0.193)	0.551***	(0.193)	0.579***	(0.195)	0.587***	(0.194)	0.566***	(0.193)
T*$T_{19/20}$	0.521***	(0.191)	0.522***	(0.191)	0.534***	(0.192)	0.542***	(0.192)	0.515***	(0.192)
Aged 30-39	0.065	(0.042)	0.131**	(0.054)	0.065	(0.042)	0.065	(0.042)	0.065	(0.042)
Aged 55-64	0.302***	(0.045)	0.333***	(0.060)	0.303***	(0.045)	0.302***	(0.045)	0.302***	(0.045)
Secondary	0.063*	(0.034)	0.063*	(0.034)	0.090*	(0.047)	0.063*	(0.034)	0.063*	(0.034)
Tertiary	0.204***	(0.047)	0.205***	(0.047)	0.223***	(0.063)	0.204***	(0.047)	0.203***	(0.047)
SE Serbia	-0.006	(0.035)	-0.005	(0.035)	-0.006	(0.035)	-0.007	(0.035)	-0.006	(0.035)
Vojvodina	-0.055	(0.034)	-0.055	(0.034)	-0.055	(0.034)	-0.056	(0.034)	-0.055	(0.034)
W serbia	-0.013	(0.034)	-0.013	(0.034)	-0.014	(0.034)	-0.014	(0.034)	-0.013	(0.034)
Urban	0.142***	(0.026)	0.141***	(0.026)	0.142***	(0.026)	0.169***	(0.036)	0.142***	(0.026)
Female	-0.021	(0.028)	-0.022	(0.028)	-0.021	(0.028)	-0.021	(0.028)	-0.035	(0.037)
Married	-0.002	(0.027)	-0.002	(0.027)	-0.002	(0.027)	-0.002	(0.027)	-0.002	(0.027)
N of children (0-4)	0.032**	(0.015)	0.031**	(0.015)	0.031**	(0.015)	0.032**	(0.015)	0.032**	(0.015)
N of children (5-9)	-0.005	(0.015)	-0.006	(0.015)	-0.006	(0.015)	-0.005	(0.015)	-0.005	(0.015)

Table A3. Estimation of the extended model - likelihood of losing a job (equation 2). continued from the previous page

VARIABLES	1 No demographics		2 Age		3 Education		4 Settlement		5 Sex	
IMRa	0.236	(0.150)	0.250*	(0.150)	0.239	(0.150)	0.237	(0.150)	0.237	(0.150)
IMRb	0.795***	(0.057)	0.797***	(0.057)	0.794***	(0.057)	0.795***	(0.057)	0.795***	(0.057)
Formal self-empl	-0.121	(0.074)	-0.122*	(0.074)	-0.121	(0.074)	-0.123*	(0.074)	-0.124*	(0.074)
Formal farmer	-0.668***	(0.119)	-0.660***	(0.118)	-0.664***	(0.119)	-0.661***	(0.119)	-0.670***	(0.119)
Formal temporary	0.432***	(0.044)	0.439***	(0.044)	0.432***	(0.044)	0.433***	(0.044)	0.431***	(0.044)
Informal wage	0.647***	(0.069)	0.653***	(0.069)	0.650***	(0.069)	0.648***	(0.069)	0.647***	(0.068)
Informal self	0.820***	(0.080)	0.819***	(0.079)	0.824***	(0.080)	0.821***	(0.080)	0.816***	(0.080)
Informal farmer	-0.166	(0.112)	-0.158	(0.112)	-0.162	(0.113)	-0.157	(0.113)	-0.167	(0.112)
Cont. fam. member	-0.447***	(0.114)	-0.437***	(0.113)	-0.441***	(0.114)	-0.440***	(0.114)	-0.442***	(0.114)
Large firm	-0.149***	(0.044)	-0.148***	(0.043)	-0.149***	(0.044)	-0.151***	(0.044)	-0.150***	(0.044)
Sector B	-0.635***	(0.185)	-0.627***	(0.184)	-0.640***	(0.185)	-0.638***	(0.185)	-0.637***	(0.185)
C	-0.210**	(0.086)	-0.207**	(0.086)	-0.215**	(0.086)	-0.214**	(0.086)	-0.209**	(0.086)
D	-0.431***	(0.156)	-0.431***	(0.156)	-0.437***	(0.157)	-0.438***	(0.157)	-0.433***	(0.156)
E	-0.504***	(0.152)	-0.504***	(0.151)	-0.505***	(0.152)	-0.509***	(0.152)	-0.505***	(0.152)
F	-0.073	(0.096)	-0.071	(0.096)	-0.077	(0.096)	-0.077	(0.096)	-0.076	(0.096)
G	-0.242***	(0.090)	-0.242***	(0.090)	-0.249***	(0.090)	-0.249***	(0.091)	-0.238***	(0.090)
H	-0.303***	(0.105)	-0.301***	(0.105)	-0.310***	(0.105)	-0.309***	(0.105)	-0.305***	(0.105)
I	-0.142	(0.113)	-0.136	(0.113)	-0.149	(0.113)	-0.151	(0.113)	-0.139	(0.113)
J	-0.433***	(0.145)	-0.429***	(0.145)	-0.439***	(0.146)	-0.447***	(0.145)	-0.433***	(0.145)
K	-0.415**	(0.162)	-0.418***	(0.161)	-0.421***	(0.162)	-0.428***	(0.162)	-0.412**	(0.162)
M	0.055	(0.098)	0.058	(0.098)	0.055	(0.098)	0.053	(0.098)	0.059	(0.099)
N	-0.510***	(0.125)	-0.506***	(0.125)	-0.516***	(0.125)	-0.524***	(0.126)	-0.508***	(0.125)
O	-0.208*	(0.123)	-0.204*	(0.123)	-0.212*	(0.123)	-0.215*	(0.123)	-0.206*	(0.123)
P	-0.424***	(0.111)	-0.424***	(0.110)	-0.429***	(0.111)	-0.432***	(0.111)	-0.423***	(0.111)
Q	-0.594***	(0.109)	-0.592***	(0.109)	-0.596***	(0.110)	-0.603***	(0.110)	-0.588***	(0.110)
R	-0.444***	(0.111)	-0.443***	(0.110)	-0.449***	(0.111)	-0.451***	(0.111)	-0.438***	(0.111)
S	-0.395***	(0.140)	-0.386***	(0.140)	-0.400***	(0.141)	-0.405***	(0.141)	-0.394***	(0.140)
T	-0.203	(0.140)	-0.200	(0.139)	-0.210	(0.140)	-0.213	(0.140)	-0.200	(0.140)
Constant	-2.225***	(0.201)	-2.292***	(0.204)	-2.245***	(0.202)	-2.237***	(0.201)	-2.221***	(0.201)
Observations	33,090		33,090		33,090		33,090		33,090	

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table A4 – Changes in the probabilities of losing a job for workers with different working characteristics after the first year of the pandemic

	stat	se
Professional status and contract type		
Permanent formal employment	-0.006	(0.005)
Formal self-employment	-0.015*	(0.009)
Formal farmer	0.019**	(0.008)
Formal temporary	0.003	(0.012)
Informal wage	0.041**	(0.021)
Informal self	-0.022	(0.027)
Informal farmer	0.004	(0.013)
Contributing family members	0.013	(0.010)
Firm size		
Small firm	0.004	(0.005)
Medium and large firms	0.003	(0.004)
Sector		
Agriculture, Forestry and Fishing	-0.035**	(0.014)
Mining and Quarrying	0.027	(0.020)
Manufacturing	0.007	(0.007)
Electricity, Gas, Steam and Air Conditioning Supply	-0.014	(0.018)
Water Supply; Sewerage, Waste Management and Remediation Activities	0.017	(0.018)
Construction	0.009	(0.014)
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	-0.006	(0.008)
Transportation and Storage	0.039***	(0.013)
Accommodation and Food Service Activities	0.036**	(0.018)
Information and Communication	0.022	(0.017)
Financial and Insurance Activities	0.015	(0.020)
Professional, Scientific and Technical Activities	0.009	(0.013)
Administrative and Support Service Activities	0.024	(0.019)
Public Administration and Defence; Compulsory Social Security	0.004	(0.011)
Education	-0.001	(0.008)
Human Health and Social Work Activities	-0.007	(0.010)
Arts, Entertainment and Recreation	0.039**	(0.020)
Other Service Activities	0.042*	(0.024)
Activities of Households as Employers	-0.011	(0.025)

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table A5 – Work status and sector of employment (for those employed in t-1) by age, education and settlement

	Age group			Education			Settlement	
	20-29	30-54	55-64	primary	secondary	tertiary	rural	urban
Status								
Permanent formal wage employment	44.3	60.7	49.1	26.5	57.7	72.7	43.3	67.2
Formal self-employment	*3.6*	*7.3*	*6.7*	*2.1*	*7.3*	*8.6*	*4.6*	*8.6*
Formal farmer	1.4	5.0	11.1	16.8	5.2	1.0	11.9	1.1
Formal temporary	33.0	12.1	5.8	7.9	13.9	13.8	11.5	14.0
Informal wage	*7.7*	*3.8*	*3.3*	*7.1*	*4.4*	*1.4*	*4.2*	*4.0*
Informal self	2.6	2.8	3.3	5.5	2.8	1.3	3.0	2.9
Informal farmer	2.1	3.9	12.9	17.9	4.7	0.7	11.3	1.2
Contributing family members	5.4	4.3	7.8	16.2	4.1	0.7	10.3	0.9
Firm size								
Small firm (up to 10 employees)	41.1	43.7	55.4	71.2	46.0	29.4	58.1	35.9
Medium or large firm	58.9	56.3	44.6	28.8	54.0	70.6	41.9	64.1
Sector								
Agriculture, Forestry and Fishing	9.7	13.2	25.3	44.2	13.0	2.9	29.3	3.9
Mining and Quarrying	1.7	1.5	1.3	0.9	1.8	1.1	1.7	1.3
Manufacturing	27.7	21.1	14.1	15.2	24.5	12.3	20.1	20.0
Electricity and Gas	1.0	1.7	1.4	0.3	1.8	1.9	1.2	1.8
Utilities	0.7	2.1	1.8	2.6	1.9	1.4	1.6	2.1
Construction	4.7	4.6	4.7	6.0	5.0	2.6	4.6	4.6
Trade	16.4	14.0	6.7	4.3	15.5	10.7	9.7	14.8
Transportation and Storage	*4.5*	*5.6*	*4.9*	*2.3*	*6.9*	*3.4*	*4.5*	*6.1*
Accommodation and Food Services	*6.1*	*2.7*	*1.9*	*1.6*	*3.9*	*1.3*	*2.1*	*3.6*
Information and Communication	3.7	2.2	1.1	0.1	1.5	4.8	0.7	3.4
Financial and Insurance Activities	1.1	1.9	1.1	0.1	0.9	4.3	0.4	2.6
Professional Activities	3.4	2.9	2.6	13.0	3.6	0.6	8.0	1.3
Administrative and Support Activities	1.9	1.9	2.3	0.2	1.7	7.7	1.1	4.5
Public Administration	4.4	6.0	5.6	2.3	2.2	1.4	1.4	2.5
Education	3.3	7.0	7.6	0.9	4.7	11.6	3.6	7.6
Health	3.9	5.7	5.5	2.7	2.4	20.2	4.2	9.0
Arts, Entertainment and Recreation	*3.0*	*1.4*	*1.2*	*1.9*	*5.4*	*8.1*	*3.8*	*6.9*
Other Service Activities	*1.6*	*2.9*	*9.8*	*0.6*	*1.5*	*2.4*	*0.9*	*2.1*
Activities of Households as Employers	1.4	1.8	1.0	0.9	1.9	1.3	0.9	2.1

Note: Sectors and statuses in italic had significant changes in the likelihood of job loss.