Effects of the COVID-19 pandemic on the labour market and the position of vulnerable groups in Serbia

Contents

List of abbreviations

Srpski:

ARS – Anketa o radnoj snazi

BDP – Bruto društveni proizvod

MMSP - Mikro, mala i srednja preduzeća

NSZ – Nacionalna služba za zapošljavanje

English:

AFSA – Accommodation and food services activities sector

AER – Arts, entertainment and recreation sector

EU – European Union

GAV – Gross added value

GDP – Gross Domestic Product

IES – Institute of Economic Sciences

ILO – International Labour Organisation

LFS – Labour Force Survey

MSME - Micro, small and medium size enterprises

NES – National Employment Service

NUTS – Nomenclature of territorial units for statistics

SES – South-Eastern Serbia

SILC – Survey on Income and Living Conditions (SILC)

SORS – Statistical Office of the Republic of Serbia

YoY – Year on year effect

Foreword

This report presents the first results from the research project "*Social Stability in Serbia Challenged? Pandemics, Economic losses, Inequality and Policy Responses*" (INEQ-RS-COVID-19), within the framework of Special Research Program on COVID-19, run by the Science Fund of the Republic of Serbia. The report analyses the effects of the COVID-19 pandemic on the labuor market and household well-being in Serbia and identifies the groups that were hit the most during the crisis. We combine different sources of data, such as Labour Force Survey (LFS) and National employment service (NES) data and data from a new nationally representative survey on the effects of COVID-19 to analyse the changes in labour market outcomes (INEQ-RS-COVID-19 survey), household income before (2019) and after (2020) the effects of pandemic occurred. Our research results, in a preliminary form, were presented at the Conference "Applied Economics Conference: Labour, Health, Education and Welfare" which was held in Belgrade on 28th and 29th October of 2020.

The writing of this report was carried out by a group of researchers from the Institute of Economic Sciences (IES), from Belgrade, Serbia. The research was conducted during 2021, and it was a collaborative effort of Marko Vladisavljević (principal investigator and project coordinator), Lara Lebedinski (senior researcher on the project), Valentina Vukmirović and Jelena Banović (junior researchers on the project). We are grateful for the support of professor Cristiano Perugini (University of Perugia, Italy) who provided timely and valuable comments throughout the first year of the project, and Sonja Avlijaš (Faculty of Economics, University of Belgrade), who provided extensive comments on the questionnaire used to conduct INEQ-RS-COVID-19 survey.

This research could not be possible without the invaluable assistance we got from the Statistical Office of the Republic of Serbia (SORS) who have kindly provided Labour Force Survey data and our gratitude particularly goes to capable staff at SORS, who continue to provide the data for the research purposes with the promptness and clarity. We are also grateful to National employment service (NES) staff for providing the data on registered unemployed. We are grateful to IES director Jovan Zubović and our colleagues at IES for the continuous support in the realization of the project. Finally, we are grateful to the Science Fund of the Republic of Serbia for enabling us with the opportunity to work on these important topics.

The opinions expressed within the report are solely the author's and do not reflect the opinions and beliefs of the organisations or persons who provided assistance in the process of report writing.

Belgrade, January 2022

Authors

Executive summary

As a response to the outbreak of the COVID-19 pandemic, the Government of Serbia declared the state of emergency on March 15, 2020. The state of emergency included a number of virus containment measures that affected the workers, population mobility, and economic activity in general. After the state of emergency ended – on May 6, containment measures were gradually withdrawn. However, there was a new surge of COVID-19 cases in June/July, and October to December and containment measures were introduced, albeit milder than during the state of emergency, once again putting limitations on business activities.

This report has analysed the effects of the COVID-19 pandemic on the labour market and financial situation of the households in Serbia and identified the groups that were hit the most during the crisis. The results presented stem from the analysis of Labour Force Survey (LFS) and National employment service (NES) data and from INEQ-RS-COVID-19– a new nationally representative survey on the effects of COVID-19, designed particularly to analyse labour market and household outcomes changes that occurred during the pandemic.

Anticipating the economic downturn, the government adopted generous support measures towards firms with near-universal character, which undoubtedly provided a lifeline for some businesses. Besides tax deferrals, main employment retention measures were direct subsidies applied across the entire private sector to the micro, small and medium enterprises (MSMEs) and large enterprises. Compared to other economies, the GDP drop in Serbia in 2020 was relatively low – only 1%, however, with diverging trends within the year and across sectors.

Main findings

The decrease in the economic activities in 2020 has been transmitted to the labour market activity without any lag – with stronger effects in terms of working hours, i.e. at the intensive margin, than in terms of employment. Compared to 2019, the employment rate in 2020 remained unchanged, while working hours decreased by about 1 hour on average (or by 2.6%). The fact that the majority of the effects took place at the intensive margin can partially be explained by employment retention subsidy, which receipt depended on keeping the pre-pandemic number of employees (i.e. not reducing them by more than 10%).

The intensity of containment measures in different quarters directed the impact of the pandemic on the labour market. Most of the adverse effects on the labour market happened in Q2, during the state of emergency. Compared to the 2019, the employment rate decreased only in Q2 by 1 p.p. (or by 2%), while the most significant decreases in the working hours were in Q1 – by 1.5 hours and particularly in Q2 – by 3 hours (i.e. by 4.0% and 7.4%). The main reason for lower working hours in the first part of the year was absenteeism due to low business activity. For some of them, businesses were entirely closed, while in other cases, their working time was limited. Restriction measures caused some companies to completely close, while in others working hours were limited. In Q3 working hours increased, as significantly fewer workers were on holidays than in the previous years, in an attempt to make up for some lost time and income. In Q4, as some limitations on

working hours were reintroduced due to rising cases, working hours were again reduced (by 0.5 hours, or by 1.5% compared to the previous year).

While the number of permanent workers increased, **the number of informal and formal temporary workers decreased in 2020 by about 10% and 6%**. The analysis suggests that while some of informal and formal temporary workers found permanent positions, and some were dismissed, **the main reason for this decrease seems to be the low availability of informal and temporary jobs in 2020**. For a large number of these workers, employment is mostly 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. On the other hand, the **most prominent decrease in the working hours was among self-employed and seasonal and occasional workers**, **by 7 and 11% respectively**. While retention subsidies for MSMEs provided job security for the formally self-employed, the pandemic reduced the time they could spend at work. The decrease in the working hours of self-employed is likely the reason they also faced a decline in their earnings by about 10%.[1]

The consequences of the pandemic were considerably different across the sectors. The accommodation and food services activities (AFSA) sector suffered the most significant decline both in employment and working hours. This sector was under the highest impact as it requires close contact with customers and cannot be performed from home or replaced with online purchases**.** The number of formally employed in the AFSA sector was in 2020 lower by 8% than in 2019, while working hours were reduced by 10%. Additionally, about one-third of workers in the AFSA sector faced unpaid leave and wage reductions, the highest of all sectors. **After AFSA, Arts, entertainment and recreation and Construction sectors faced the most substantial decreases in the working hours** of 9% and 7%. At the same time, an above-average reduction in working hours is also found in Transport, Professional, Administrative and Other services, however these sectors have not faced the loss of formal jobs. Finance sector faced a significant temporary decrease in formal employment in Q2 by 25%, however finishing the year with only a 3% decrease, while Transport also had a reduction of formal employment by 2% annually. **Most informal jobs were lost in the Agriculture sector.** While the number of formal jobs in agriculture remained unchanged, informal jobs in this sector shrunk by about 14%. On the other hand, Trade and Information and Communication had yearly increases in employment and did not face working hours decreases.

One of the consequences of the COVID-19 crisis was **the increase in the inequalities of employment opportunities for low-educated, youth and persons from South-Eastern Serbia (SES)**. These groups had significantly lower employment rates than the rest of the population even before the pandemic, and this gap has increased after the first year of the pandemic. **This effect was most pronounced for low-educated, as they faced decreased employment in both Q3 and Q4** (by 2.4 and 3.0 percentage points)**,** unlike other workers for whom employment was unchanged**. On the other hand, youth and workers from the SES region faced temporarily lower employment only in Q2 and Q3, respectively.** Young workers also had a higher reduction in working hours in Q2 compared to other workers, as well as an increase in working hours in Q4, in contrast to others, whose working hours were reduced this quarter. Young people were also the only vulnerable group to have lower

---

[1] The analysis of wage trends relies only on the data from INEQ-RS-COVID-19 survey.

earnings during the pandemic, by about 2%. In addition to a temporary reduction of employment in Q3, workers in the SES region had longer working hours in this quarter and in Q4. Rural workers faced different working hours trends than urban workers, likely due to the seasonality of their work, which prevented making up for the lost time from the first part of the year in Q3.

The pandemic has caused a significant increase in remote working. While we find no evidence of negative impacts on productivity, **more frequent work from home did cause additional difficulties, because about one third of those who worked from home did not have adequate conditions** such as office-like space and adequate chairs for work. **An additional problem for workers during the pandemic was that some employers did not provide full compensation during sick leave**, in line with government recommendations.

Limited data on household income that we had at our disposal[2] suggest that while **the position of vulnerable households did not deteriorate on average**, **many of those from the first quintile saw a worsening financial situation**. These results are probably due to the heterogeneity of this group, which includes both households of vulnerable workers and households without work. While some households in the first group faced job loss or wage cuts, the main sources of income for jobless households – pensions and social transfers – were not reduced during the COVID-19 pandemic, while some additional transfers to them have been paid.

Policy implications

Support measures to mitigate the economic consequences of COVID-19 in Serbia were the most generous among the countries in the Western Balkans. The government has set a goal of *efficient implementation* of fiscal measures *without unnecessary procedures*, so that the help arrives in time to those who need it the most.[3] Employment retention subsidies and tax deferrals – central pillars of support to enterprises – were implemented across the entire private sector, with the exception of the Finance sector, with more substantial assistance to MSMEs than to large companies. These measures partly caused a high budget deficit of 8.1% of the GDP – higher than in the EU and most countries in the region. At the same time, public debt rose to 57.4% of GDP (by 5.4 percentage points), but remains below the EU-27 average and most countries in the region. **These measures undoubtedly had their role in preserving formal permanent employment, and the more substantial support towards MSMEs was justified, as they were more vulnerable in the terms of liquidity.**

However, the amount and length of the assistance to firms should have been differentiated according to the estimated risks each sector faced during the pandemic and initial estimates of their performances. Our analysis indicates that some sectors such

---

[2] Nationally representative income data used to estimate poverty for 2020 are collected within Survey on Income and Living Conditions (SILC) 2021 survey and are available only in late 2022. In this report we present findings based on self-estimated household income from INEQ-RS-COVID-19 survey. These results should be treated as preliminary, given that SILC survey collects the data on different income sources, in much more detail than INEQ-RS-COVID-19 survey and uses additional information to arrive to a more reliable estimate of the household income.

[3] https://ras.gov.rs/uploads/2020/04/program-01-web.pdf (Serbian only)

as Information and communication and Trade had increased employment and no changes in the working hours. In contrast, Accommodation and food services sector faced the most substantial decreases in employment and working hours, while other sectors are in between these two extremes. The risk assessment could include the information on whether workers in the sector can work from home and if their work requires direct contact with other people, as these jobs were under a greater impact of the pandemic. Although such data are not available for Serbia, these estimates could have been taken from research for other countries such as ICP for Italy or O*Net for US. **Although sector-specific support was applied in late 2020, differentiation could have been implemented earlier, and therefore the subsidy would be better targeted and cause lower costs.**

On the other hand, jobs of formal temporary workers were not in the focus of measures to preserve employment and their number decreased. If their contract expired during the pandemic, these workers had difficulties in finding their next job due to the pandemic, and as a result, their income stability was compromised**. Similarly, the pandemic has led to a reduction in the number of workers in the informal sector**, who do not have contracts to protect their employment and income. Employment in both groups depends on the availability of temporary jobs which have been less available during the pandemic. **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 could be to temporarily, during the period of the pandemic, grant financial support to all unemployed persons registered with the National employment service.

Since the pandemic has increased the inequalities of employment opportunities of low-educated, youth and in the SES region, employment programmes focused on these groups are necessary. While government programmes for youth such as "My first wage" and support for young people to start their own business are important to support their employment, those who were hit the most – the low educated – haven't had programs specifically designed to address their needs. The same applies to workers from the SES region, as a least developed part of the country. While some of these increases in employment inequalities could be temporary, they have still impacted their income security and could have a permanent negative impact on their employability.

At the same time, **some of the workers' rights were violated during the crisis and the government needs to ensure that they are adhered to a greater degree.** During the period of low economic activity in Q1 and Q2 employees used their holiday days, and therefore they could not use them during the summer months. In other words, **during the pandemic, the vacation days of many workers were used in periods when business could not work**. **Therefore, they were doubly burdened - locked in their homes during the state of emergency and without holidays in the summer months.** Furthermore, according to the recommendation from the Government, the employers were to pay 100% of the wage to the employee who went on sick leave due to COVID-19 infection. However, **about one-third of the employees did not receive the full compensation during COVID-19 sick leave.** Finally, about one-third of the workers who worked from home did not have adequate working conditions such as office-like space and adequate chair for work, which could have caused additional health problems. In other words, **the employers haven't provided working conditions for those working from home to a sufficient degree**.

Rezime

U cilju suzbijanja pandemije virusa COVID-19, Vlada Srbije je 15. marta 2020. godine proglasila vanredno stanje, koje je podrazumevalo niz mera u cilju suzbijanja virusa, koje su uticale na radnike, mobilnost stanovništva i ukupnu privrednu aktivnost. Nakon prestanka vanrednog stanja 6. maja,ove mere su postepeno redukovane. Međutim, nakon novog rasta broja zaraženih u junu/julu i u periodu oktobar/decembar ponovo su uvedene su mere, iako blaže nego tokom vanrednog stanja, koje su opet ograničile privrednu aktivnost.

U ovom izveštaju analizirani su efekti COVID-19 pandemije na tržište rada i materijalno stanje domaćinstava u Srbiji i identifikovane su grupe koje su bile najteže pogođene tekućom krizom. Rezultati su zasnovani na analizi podataka Ankete o radnoj snazi (ARS) i Nacionalne službe za zapošljavanje (NSZ), kao i iz INEQ-RS-COVID-19 – novog nacionalno reprezentativnog istraživanja o efektima pandemije, osmišljenog posebno za analizu promena na tržištu rada i finansijske situacije domaćinstava do kojih je došlo tokom pandemije.

U skladu sa očekivanim efektima pandemije na ekonomiju, Vlada je usvojila mere podrške preduzećima, koje su bile skoro univerzalnog karaktera i koje su nesumnjivo imale veoma značajan uticaj na opstanak nekih preduzeća. Pored odlaganja plaćanja poreza, glavna mera usmerena ka održanju zaposlenosti bile su direktne subvencije, u obliku direktnih davanja celokupnom privatnom sektoru. U poređenju sa drugim privredama, pad BDP-a u Srbiji u 2020. godini bio je relativno nizak – samo 1%, međutim, sa različitim trendovima u toku godine i po sektorima.

Glavni nalazi

Pored smanjenja privrednih aktivnosti u 2020. godini, efekti pandemije su se istovremeno ispoljili i na tržište rada, sa jačim efektima u pogledu smanjenja časova rada, nego zaposlenosti. U odnosu na 2019. godinu, stopa zaposlenosti u 2020. godini je ostala nepromenjena, dok su časovi rada u proseku bili niži za oko 1 sat (ili za 2,6%). Činjenica da se većina efekata desila na intenzivnoj margini, tj. kroz smanjenje časova rada, delimično se može objasniti subvencijama privredi, u okviru kojih uslov za prijem bio je zadržavanje predpandemijskog broja zaposlenih (tj. smanjenja ne većeg od 10%).

Intenzitet mera suzbijanja pandemije u različitim kvartalima uticao je na jačinu efekata na tržište rada. Većina negativnih efekata dogodila se u drugom kvartalu (Q2), tokom vanrednog stanja. Stopa zaposlenosti je smanjena samo u Q2 za 1 procentni poen (p.p., ili za 2%), dok je najveći pad u časovima rada zabeležen u Q1 – za 1,5 sat i posebno u Q2 – za 3 sata (tj. za 4,0% i 7,4%). Glavni razlog za kraće radno vreme u prvom delu godine bio je izostanak sa posla uzrokovan niskom poslovnom aktivnošću. Dok su neka preduzeća bila potpuno zatvorena, u drugim je radno vreme bilo značajno ograničeno. U Q3 časovi rada su bili viši nego prethodne godine, jer je znatno manje radnika koristilo godišnji odmor, u pokušaju da se nadoknadi izgubljeno vreme i prihod. U Q4, nakon što su ponovo uvedena ograničenja radnog vremena zbog porasta broja zaraženih, časovi rada su opet bili niži nego prethodne godine (za 0,5 sati).

Dok je broj radnika koji rade za stalno povećan, **broj neformalnih i formalnih radnika koji nemaju stalni posao je smanjen u 2020. godini za oko 10% i 6%**. Analiza sugeriše da, dok su neki od ovih radnika našli stalna radna mesta, a neki od njih otpušteni sa poslova, **glavni razlog za ovo smanjenje je bila niska dostupnost neformalnih i ne-stalnih poslova u 2020. godini**. Kod velikog broja ovih radnika zapošljavanje je uglavnom tranzitorno, pa nakon završetka jednog posla, oni traže drugi. U tom smislu COVID-19 pandemija je postavila značajnu prepreku u njihovoj uobičajenoj dinamici na tržištu rada, jer ovi poslovi nisu bili dostupni u meri u kojoj je to bilo prethodnih godina. S druge strane, **najznačajnije smanjenje u časovima rada bilo je kod samozaposlenih i sezonskih i povremenih radnika**, **za 7% i 11%**. Dok su subvencije sektoru mikro, malih i srednjih preduzeća (MMSP) obezbedile sigurnost poslova formalno samozaposlenih, pandemija je smanjila vreme koje su mogli da provode na poslu. Manji broj časova rada samozaposlenih je verovatno razlog zašto su se oni suočili sa i padom zarada od oko 10%.[4]

Posledice COVID-19 pandemije bile su veoma različite u različitim sektorima. Najveći pad zaposlenosti i časova rada bio je prisutan u sektoru usluga smeštaja i ishrane. Ovaj sektor je bio pod najvećim uticajem pandemije, jer obavljanje aktivnosti podrazumeva bliski kontakt sa korisnicima usluga, koji se ne može obavljati od kuće ili zameniti online kupovinom**.** Broj formalno zaposlenih u ovom sektoru u 2020. godini bio je manji za 8% u odnosu na 2019. godinu, dok su časovi rada smanjeni za oko 10%. Pored toga, oko jedne trećine radnika u sektoru usluga smeštaja i ishrane suočilo se sa neplaćenim odsustvom i smanjenjem plata, što je više od svih sektora. **Posle sektora usluga smeštaja i ishrane, sektori umetnosti, zabave i rekreacije i građevinarstva imali su najveće smanjenje časova rada** od 9% i 7%. Natprosečno smanjenje časova rada zabeleženo je i u saobraćaju, stručnim, administrativnim i drugim uslugama, ali u ovim sektorima nije došlo do gubitka formalnih poslova. Sektor finansijskih usluga suočio se sa značajnim privremenim smanjenjem formalne zaposlenosti u Q2 za 25%, ali ipak završivši godinu sa padom od samo 3%, dok je u sektoru transportnih usluga takođe došlo do smanjenja formalne zaposlenosti za 2% na godišnjem nivou. **Najveći broj neformalnih poslova je izgubljen u sektoru poljoprivrede.** Dok je broj formalnih poslova u poljoprivredi ostao nepromenjen, broj neformalnih poslova je smanjen za 14%. Sa druge strane, sektori trgovine i informisanja i komunikacija su imali godišnji porast zaposlenosti i nisu suočili sa smanjenjem radnog vremena.

Jedna od posledica krize izazvane virusom COVID-19 bilo **je povećanje nejednakosti u mogućnostima zaposlenja za niskoobrazovane, mlade i u regionu Jugoistočne Srbije** (JIS). Ove ranjive grupe su, i pre početka pandemije, imale značajno niže stope zaposlenosti od ostatka populacije, a ovaj jaz se povećao nakon prve godine pandemije. **Ovo povećanje je bio najizraženije kod niskoobrazovanih, jer su se u Q3 i Q4 suočili sa smanjenom zaposlenošću** (za 2,4 i 3,0 procentna poena)**,** za razliku od ostalih radnika kod kojih nije bilo promena. **S druge strane, privremeno niža zaposlenost bila je prisutna kod mladih u Q2 i radnika iz regiona JIS u Q3.** Mladi su takođe imali nešto više smanjenje radnog vremena u Q2 u odnosu na ostale radnike, kao i povećanje radnog vremena u Q4, za razliku od ostalih grupa kod kojih je radno vreme u ovom kvartalu bilo smanjeno. Mladi su bili i jedina ranjiva grupa koja je tokom pandemije imala niže zarade, za oko 2%. Pored privremenog smanjenja

---

[4] Analiza kretanja zarada oslanja se samo na podatke iz INEQ-RS-COVID-19 istraživanja.

zaposlenosti u Q3, radnici u regionu JIS-a su u ovom kvartalu i u Q4 imali duže radno vreme. Radnici iz ruralnih područja su se suočavali sa drugačijim trendovima časova rada od onih iz gradskih područja, verovatno zbog sezonskog karaktera posla u ruralnim sredinama, koji je onemogućio nadoknađivanje izgubljenog radnog vremena u Q3.

Pandemija je izazvala značajan porast učestalosti rada od kuće. Iako nije negativno uticao na produktivnost, **učestaliji rad od kuće je izazvao dodatne poteškoće, jer oko trećina oni koji su radili od kuće nisu imali adekvatne uslove za rad** kao što su prostor nalik na kancelariju i adekvatna stolica za rad. **Dodatni problem za radnike u toku pandemije bilo je to što pojedini poslodavci nisu obezbedili punu naknadu za vreme bolovanja**, u skladu sa preporukama Vlade.

Ograničeni podaci o prihodima domaćinstva kojima smo raspolagali[5] sugerišu da **iako se položaj ugroženih domaćinstava u proseku nije pogoršao**, **mnogi od onih iz prvog kvintila (najsiromašnijih 20%) beleže pogoršanje finansijske situacije**. Ovi rezultati verovatno su uzrokovani heterogenošću ove grupe, koja obuhvata kako domaćinstva ugroženih radnika tako i domaćinstva bez posla. Stoga, dok su se neka domaćinstva iz prve grupe suočila sa gubitkom posla ili smanjenjem plata, glavni izvor prihoda za domaćinstva bez posla su penzije ili socijalni transferi, koji nisu smanjivani smanjeni tokom pandemije COVID-19, a neki transferi ka njima su čak bili i povećani.

Implikacije istraživanja za javne politike

Mere podrške za ublažavanje ekonomskih posledica COVID-19 u Srbiji bile su najizdašnije među zemljama Zapadnog Balkana. Vlada je za cilj postavila *efikasnu primenu* **fiskalnih mera** *bez nepotrebnih procedura***, kako bi pomoć na vreme stigla onima kojima je najpotrebnija**.[6] Subvencije za očuvanje zapošljavanja i odlaganje plaćanja poreza – centralni stubovi podrške preduzećima – sprovedeni su u celom privatnom sektoru, sa izuzetkom sektora finansija, i uz značajniju pomoć MMSP sektoru nego velikim preduzećima. Ove mere su delimično su uslovile visok budžetski deficit u 2020. – od 8,1% BDP-a, koji je bio viši nego u EU i većini zemalja u regionu. Istovremeno javni dug je porastao na 57,4% BDP-a (za 5,4 procentna poena), međutim i dalje je ispod proseka EU-27 i većine zemalja u regionu. **Ove mere su nesumnjivo imale značajnu ulogu u očuvanju formalnog zaposlenja radnika sa stalnim poslovima, a značajnija podrška MMSP bila je opravdana, jer su ona bila ranjiviji sa stanovišta likvidnosti.**

Međutim, iznos i dužina davanja pomoći preduzećima je trebalo da bude različita u različitim sektorima, u skladu sa procenjenim rizicima sa kojima se svaki sektor suočavao u toku pandemije i početnim procenama kretanja u njihovim aktivnostima. Naša analiza ukazuje na to da su neki sektori kao što su informacije i komunikacije i trgovina napredovali u smislu povećanja zaposlenosti. Nasuprot tome, sektor usluge smeštaja i ishrane

---

[5] Nacionalno reprezentativni podaci o prihodima koji se koriste za procenu siromaštva za 2020. godinu prikupljaju su u okviru Ankete o prihodima i uslovima života (SILC) 2021. godine i dostupni su tek krajem 2022. U ovom izveštaju predstavljamo nalaze zasnovane na samoproceni prihoda domaćinstva iz INEQ-RS-COVID-19 istraživanja. Ovi nalaze treba posmatrati kao preliminarne, s obzirom da SILC istraživanje prikuplja podatke o različitim izvorima prihoda mnogo detaljnije od INEQ-RS-COVID-19 istraživanja i koristi dodatne informacije da bi došlo do pouzdane procene prihoda domaćinstva.

[6] https://ras.gov.rs/uploads/2020/04/program-01-web.pdf (Serbian only)

se suočio sa najvećim smanjenjem broja zaposlenih i radnih sati, dok su ostali sektori bili između ova dva ekstrema. Procena rizika je mogla da obuhvati informacije o tome da li radnici mogu da rade od kuće, i da li njihov posao zahteva direktan kontakt sa drugim ljudima, jer su ovi poslovi bili pod znatno većim uticajem pandemije. Iako takvi podaci nisu dostupni za Srbiju, ove procene su mogle biti preuzete iz istraživanja za druge zemlje kao što su ICP za Italiju ili O*Net za SAD. **Iako je sektorska podrška primenjena krajem 2020. godine, diferencijacija je mogla da se sprovede i ranije, pa bi stoga pomoć bila bolje usmerena i uzrokovale bi manje troškove.**

S druge strane, poslovi formalnih radnika koji nisu stalno zaposleni nisu bili u fokusu mera očuvanja zaposlenosti i njihov broj se smanjio. Istek ugovora za ove radnike je značio ostajanje bez posla, jer su zbog pandemije imali poteškoća da nađu novi posao, i kao rezultat toga, stabilnost njihovih prihoda je bila značajno ugrožena**. Slično tome, pandemija je dovela i do smanjenja broja radnika u neformalnom sektoru**, koji nemaju ugovore koji bi štitili njihovo zaposlenje. Zaposlenost u obe grupe zavisi od dostupnosti privremenih poslova, koji su bili manje dostupni tokom pandemije nego inače. **Stabilnost prihoda ovih radnika mogla je biti očuvana u većoj meri uz pomoć dodatnih mera novčane podrške u toku pandemije.** Iako je teško targetirati pomoć za ove radnike, jedan od mehanizama mogao je biti da se privremeno, tokom perioda pandemije, dodele finansijska sredstva svim nezaposlenim licima prijavljenim na evidenciju Nacionalne službe za zapošljavanje.

Kako je pandemija povećala nejednakosti u mogućnostima zapošljavanja niskoobrazovanih, mladih i u regionu Jugoistočne Srbije, neophodni su programi zapošljavanja fokusirani na ove grupe. Dok su vladini programi za mlade poput „Moja prva plata" i podrška mladim preduzetnicima svakako važni, za one koji su najviše pogođeni – niskoobrazovane – posebnih programa za podsticaj zapošljavanja nije bilo. Isto važi i za radnike iz regiona Jugoistočne Srbije, kao najnerazvijenijeg dela zemlje. Iako bi neka od ovih povećanja nejednakosti mogla biti privremena, ona su svakako uticala na stabilnost njihovih prihoda, a mogu imati trajan negativan uticaj na njihovu zapošljivost.

Istovremeno, neka radnička prava bila su ugrožena tokom krize i vlada treba da obezbedi da se ona u većoj meri poštuju u vanrednim situacijama. Zaposleni su u periodu niske privredne aktivnosti u Q1 i Q2 koristili dane godišnjeg odmora, koji onda nisu mogli da budu korišćeni tokom leta. Drugim rečima, **u toku pandemije godišnji odmori mnogih radnika korišćeni su u periodima kada poslovanje nije moglo da se obavlja. Stoga su radnici bili dvostruko opterećeni – zatvoreni u svojim domovima tokom vanrednog stanja i bez odmora u letnjim mesecima.** Takođe, prema preporuci Vlade, poslodavci je trebalo da isplate 100% zarade zaposlenom koji je otišao na bolovanje zbog infekcije virusom COVID-19. Međutim, **oko jedne trećine zaposlenih nije primilo punu nadoknadu tokom bolovanja zbog COVID-19.** Konačno, oko jedne trećine radnika koji su radili od kuće nije imalo adekvatne uslove za rad kao što su kancelarijski prostor i adekvatna stolica za rad, što je moglo da izazove dodatne zdravstvene probleme. Drugim rečima, **poslodavci nisu u dovoljnoj meri obezbedili uslove za rad onima koji rade od kuće.**

1. COVID-19 timeline, economic measures and main macroeconomic trends

1.1. COVID-19 timeline in Serbia

In order to prevent the spread of the virus, the Government declared the state of emergency on March 15, 2020. The state of emergency included a number of measures that had impacted the economic activity. Measures included a curfew, limiting the movement of people, during certain days (weekends) or hours within the day (typically in the evening). The duration of the curfew was changed in relation with the changes in severity of the COVID-19 outbreak. Additionally, limitation were put on intercity public traffic (bus and trains), while gyms, restaurants, bars were closed. Entry into Serbia for foreign citizens was banned; with border crossings temporarily closed, and all international air traffic suspended. Furthermore, preschools, primary and secondary schools were closed, and thus workers who are parents of younger children had to remain home and take care of them. Notably, employers or employees haven't received any compensation for the loss of working hours which arose due to increased family responsibilities (ILO, 2020). The state of emergency ended on May 6, 2020 although some restrictions were lifted earlier.

Figure 1.1 indicates that the state of emergency had a clear effect on the mobility of people, and consequently on the economic activity. During the state of emergency visits to retail and recreation services, as well as traveling decreased by about 60%, suggesting that the trade (without grocery stores and pharmacies), transport and tourism would be hit the most by the crisis. Other sectors were forced to quickly adapt to working from home, as going to workplaces also decreased by about 60%. Although the visits to the grocery stores were also decreased by about 40%, this probably did not affect their turnover, as people opted to buy more within one visit to the store and/or started using online purchases (ILO, 2020).

Figure 1.1: The Google Community Mobility Report for Serbia
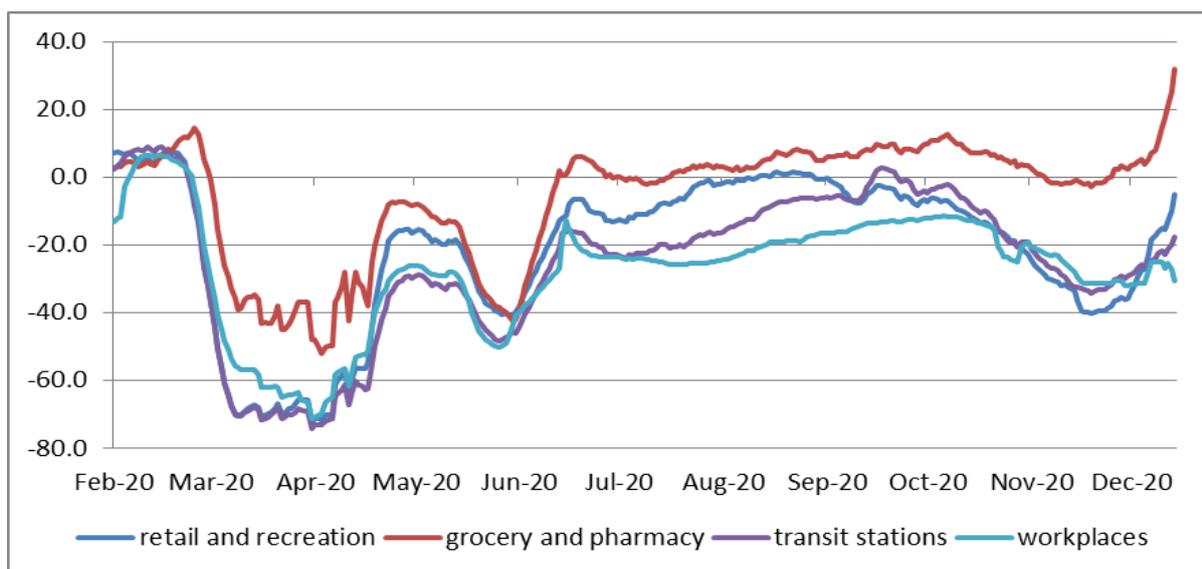
After the state of emergency ended, Government containment measures were gradually withdrawn. However, with the new surge of COVID-19 cases (so called "second wave") at the end of June, in July working hours for restaurants, bars, cafes, and night clubs were limited, as well as for shopping centres, gyms, and other service industry facilities, with the mask mandate remaining in closed spaces. After August and September, which passed with low numbers of infections, there was a new surge of cases in October - "third wave of the pandemic", which continued until the end of the year and brought the highest number of infections, hospitalizations and deaths. Government initially limited working hours (to 11 pm) in October; however, as the increase in the number of infected cases continued, further measures were adopted in December. These measures included stricter limits on working hours of restaurants and bars, shopping, fitness and beauty centres (from Monday to Friday until 5 pm and closed during the weekend).

Second and third wave also resulted in decrease up to 40% in visits to retail and recreational facilities, transit stations and workplaces in both June/July and November/December (Figure 1). Although the number of registered infections and hospitalisations was higher in these two periods than during the state of emergency, the decrease in movement was lower as the measures during the implemented during the state of emergency were much more restrictive.

1.2. Measures adopted by the government

During 2020, the Government implemented several sets of measures aiming to support the economy and attenuate the effects of the pandemic. Most important among these measures were those aiming to 1) preserve employment in the private sector and 2) income support measures. Additionally, in the initial stages of the pandemic there was a limit on exports of food, protective equipment and disinfectants[7] a moratorium on payment housing and other loans.[8] Furthermore Government allocated 24 million euros to credit funds to business entities for maintaining liquidity and current assets in order to preserve the stability of financial and economic system of the Republic of Serbia.[9]

Measures aiming to preserve employment in the private sector

Within the first main programme, adopted in April 2020, main implemented measures were: 1) tax deferrals (including taxes and contributions on salaries and corporate taxes for the entire private sector); 2) employment retention subsidies. Only business which did not cut their employment more than 10% were eligible for the measures. The measure included all the entire private sector, regardless of the sector or financial results during the lockdown, apart from the financial sector (i.e. sector K according to NACE classification).

---

[7] https://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/vlada/odluka/2020/30/3/reg (Serbian only)
[8] https://nbs.rs/sr_RS/scripts/showcontent/index.html?id=15321&konverzija=ye (Serbian only)
[9] https://fondzarazvoj.gov.rs/download/UREJNVUredba_likvidnost_Kovid.pdf (Serbian only)

Employment retention subsidies during the first wave of COVID-19 epidemic included two main measures: one for micro, small and medium size enterprises (MSMEs) and one for large companies.[10] Retention measure targeting MSMEs included a payment of the minimum wage (from March which amounted to 30.367 RSD or about 250 €) for three months (for March, April and May, with payments occurring with a two-months delay in May, June and July) for every full-time worker, as well as and a proportional amount of minimum wage for part-time workers. According to the Ministry of Finance minimum wage (or the equivalent for part-time workers) for about 1.05 million employees was paid (ILO, 2020). At that rate the total cost of the measure was around 93 billion dinars (about 800 million euros).

On the other hand, large enterprises were eligible to receive 50 percent of the minimum wage for each employee who was on the furlough in the period, for at least 15 days within the month. This was due to the fact that, according to the Labour Law, if a large company is the employer it has an obligation to pay 60 percent of the average gross earnings over the past 12 months to the worker whose job was terminated.[11] Similarly to the retention measure of the MSMEs the payment was available for three months (for March, April and May, with payments occurring with a two-months delay in May, June and July), for whom the official salary form was submitted to the social security registry. From the government reports it is not clear how many of these subsidies were paid out.

As the effects of the pandemic were also present in the following months, the government applied a similar employment retention measure to compensate for the losses in June and July. The measure for MSMEs included all those who qualified for the first retention measure and who have received the last payment in July 2020. The payment, which included a 60 percent of the minimum wage (18.220 RSD) per employee, was implemented in August and September of 2020. For large companies the measure included 50% of the minimum wage (for March) for each employee who was on the furlough in June and July for more than 15 days per month, and these payments were made in August and September. [12]

Throughout the crisis government also implemented several measures aiming to support specific sectors which were hit the most during the pandemic:

- Additional retention measure was applied in December 2020, aiming to support **hospitality and accommodation and food services sector**. The payment in the amount of RSD 30.367 was provided for all employees who had a salary in October 2020, and for whom employer has filed an application for this measure. Additionally, earlier in the year (from May) tourism, transport and hospitality enterprises were granted the eligibility to use loans from Investment Development Fund (ILO, 2020).

---

[10] https://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/vlada/uredba/2020/54/2/reg (Serbian only)
[11] https://www.srbija.gov.rs/vest/en/152964/state-sets-aside-51b-to-mitigate-coronavirus-economic-blow.php
[12] https://assets.kpmg/content/dam/kpmg/rs/pdf/2020/KPMG-Poreske-vesti-Drugi-set-COVID-19-fiskalnih-mera-i-direktnih-davanja.pdf (Serbian only)

- To **support healthcare sector**, Government increased salaries by 10% to all health care professionals in the Republic of Serbia in April 1.[13] Until April, more than 2,500 health care workers who were employed on fixed-term or temporary basis were given permanent contracts[14] while in May, the same applied for 455 caregivers and 127 health workers at social care institutions who were hired during the state of emergency on a temporary basis. Also, on November 19, the Government implemented measures aiming to provide a grant of RSD 10.000 for all employees in the COVID-19 and social protection system. [15]

- In May, special assistance was provided to **free-lance artists** in the amount of 30,000 RSD per month. For these purposes government allocated RSD 212 million from the budget.

- The government also has adopted two measures to help the **farmers**, the first of which refers to easier access to loans (total amount 1.45 billion RSD), and the second to direct financial support (1.15 billion RSD) has been approved for direct assistance.[16]

The Government also passed a Decree about paying full amount of salaries (100%, instead of 65%) to employees who were out of work on sick leave due to the proposed measure of isolation, self-isolation or COVID-19 illness.[17]

Income support measures

Main income support measure during the first period was the universal cash transfer to adult population, in the amount of 100€. According to the Minister of Finance about 6.15 million people has received the transfer.[18] The total estimated cost therefore amounted to about 615 million euros (or about 72 billion RSD). Additionally, pensioners and temporary benefit recipients received one-off transfer in the amount of 4.000 RSD (about 34 euros).[19] The estimated cost of this measure was about 58 million euros. Furthermore, 14,000 most vulnerable women in Serbia have received assistance worth €100,000 in essentials.[20]

---

[13] https://www.srbija.gov.rs/vest/en/152946/wages-in-healthcare-sector-increase-by-10-as-of-tomorrow.php
[14] https://www.srbija.gov.rs/vest/en/154079/serbia-employs-2500-new-health-workers.php
[15] https://www.minrzs.gov.rs/srb-lat/aktuelnosti/vesti/pomoc-od-10.000-dinara-zaposlenima-u-ustanovama-socijalne-zastite-koji-su-u-sistemu-kovida---19 (Serbian only)
[16] http://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/viewdoc?uuid=711961e6-9ca9-40a5-b587-ca7d9e787828 (Serbian only)
[17] http://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/vlada/zakljucak/2020/50/2/reg (Serbian only)
[18] https://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/vlada/uredba/2020/60/1/reg (Serbian only)
[19] https://www.srbija.gov.rs/vest/en/152484/government-recommends-payment-of-full-amount-of-pensions.php
[20] https://www.srbija.gov.rs/vest/en/153866/assistance-for-14000-most-vulnerable-women-in-serbia.php

1.3. Main macroeconomic trends in 2020

Compared to 2019, real GDP in Serbia decreased by 1.0 percent in 2020. Due to particular structure of Serbian economy and solid macroeconomic performance in the period preceding the COVID-19 pandemic, Serbia's GDP drop was lower than in other Western Balkan countries which had a decrease between 3.5 (in Albania) and 15 percent (Montenegro)[21] while at the same time real GDP in EU 27 decreased by 6.1 percent. **The decrease of GDP is the result of diverging growth trends within the year.** In the first quarter (Q1) of 2020, GDP in Serbia grew by 5.2 percent (year-on-year), continuing a long-term trend of GDP growth in the previous period (on average 3.4 percent in the last four years). In the second quarter (Q2) of 2020, when most strict COVID-19 containment measures were implemented, GDP recorded a reduction of 6.2 percent, while in third (Q3) and fourth quarter (Q4) of 2020, GDP decreased by 1.4 and 1.1 percent (year-on-year) respectively, indicating a gradual stabilization of economic trends.[22]

The trends in economic activities were significantly different across sectors.[23] The decrease in economic activity was the highest in sector of Arts, entertainment and recreation and other services[24] (yearly Gross added value - GAV decrease was 14.6 percent), Professional and support service activities[25] (by 9.0 percent), Trade, transport and accommodation[26] (by 5.2 percent) and Construction (by 5.1 percent). All these sectors with the exception of Construction had a similar dynamics as the overall economy: they recorded a growth (or stagnated) in Q1, they had the biggest decrease in activity in Q2, while in Q3 and Q4 they also recorded a decrease, but to a much lesser extent than in Q2. On the other hand, the Construction sector recorded a significant growth in Q1, then a mild drop in Q2, while the biggest drop in the activity was recorded in Q3 and Q4 (Figure 1.2). This is probably due to the fact that although the work in construction was able to continue, the decrease in value added resulted from shrinking demand which occurred later in the year.

On the other hand, some sectors recorded a growth such as Information and communication (7.3 percent), Agriculture[27] (4.2 percent), and Finance and insurance (4.1 percent), which was constant throughout the year. The growth was also recorded in the Public administration, Education and Health sector[28] (5.1 percent), which are predominantly publicly owned and financed from the budget, while the Real estate activities sector stagnated (decrease of 0.2 percent) in all quartiles.

The indicator for the wide group of sectors including Mining, Manufacturing and Utilities sectors[29] indicates a stagnation on the yearly level (decrease of 0.4 percent), resulting from a

---

[21] International Monetary Fund: World Economic Outlook, Managing Divergent Recoveries (2021)

[22] Statistical Office of the Republic of Serbia: Trends, Quarter IV of 2020 (2021)

[23] Statistical Office of the Republic of Serbia: Monthly Statistical Bulletin 12/2020 (2021)

[24] In their report, SORS provides one growth indicator for three NACE sectors: sector R (Arts, entertainment and recreation), S (Other service activities) and T (Activities of households as employers).

[25] Similarly, within this category SORS provides one indicator for sectors M (Professional, scientific and technical activities) and N (Administrative and support service activities)

[26] Sectors G (Wholesale and retail trade), H (Transportation and storage) and I (Accommodation and food service activities).

[27] Sector A which includes: Agriculture, forestry and fishing

[28] Sectors O (Public administration and defence; compulsory social security) P (Education) and Q (Human health and social work activities)

[29] Sectors B (Mining and quarrying); C (Manufacturing); D (Electricity, gas and steam supply) and E (Water supply, sewerage, waste management and remediation activities).

decrease in Q2, and an increase in activity in other quarters. Since this indicator does not separate manufacturing from other sectors, we also analyse the indices of industrial production as an indicator of trends in Manufacturing, which could be more procyclical. In Q1 2020 industrial production grew by 4.5 percent (year-on-year), which reflects a continuing upward trend from the previous years. In Q2, industrial production shrank by 7.6 percent, followed by a rebound in Q3 and Q4 at the rate of 3.3 and 1.5 percent respectively. At the annual level, industrial production growth in 2020 amounted to 0.4 percent.[30]

Figure 1.2. Yearly sectorial Gross Value-Added growth in 2020, by quarters
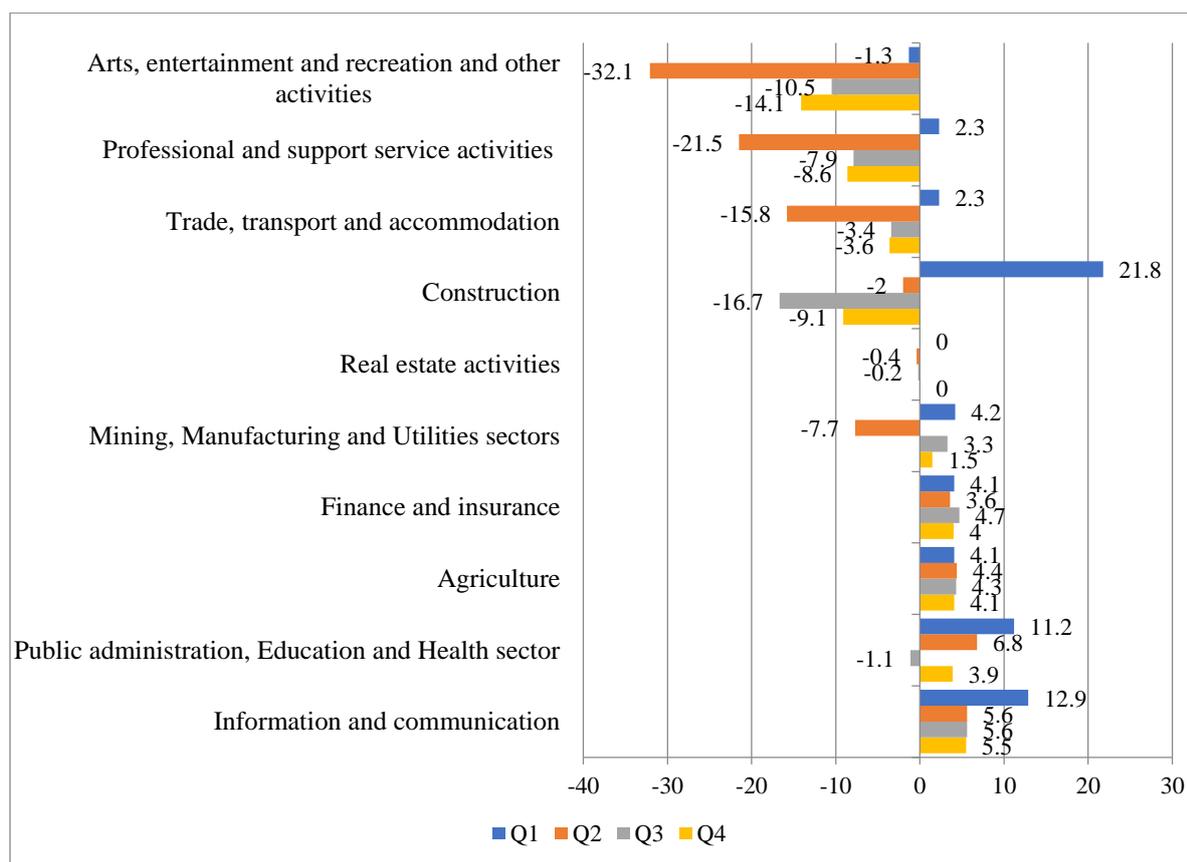
Source: Statistical Office of the Republic of Serbia, Monthly Statistical Bulletin 12/2020

Investment activity also recorded a decrease, after a steady growth in the previous years.[31] At the annual level, in 2020, gross fixed capital formation recorded a real decline of 2.8 percent compared to the previous year.[32] Investment activity continued to grow in Q1 of 2020 at a pace of 12.0 percent compared to the same quarter of the previous year. In Q2, a decline in the investment activity at a rate of 11.8 percent was recorded, continuing in Q3 and Q4 (4.5 and 4.1 percent decrease respectively).[33] **Similarly, export, import and domestic trade decreased in 2020**, after several years of steady growth.[34] Annual export decrease (of 2.8 percent) was milder than the decrease in imports (3.8 percent) indicating a more

---

[30] Ibid.

[31] Statistical Office of the Republic of Serbia: Trends, Quarter I of 2018 (2018); Trends, Quarter IV of 2020 (2021)

[32] Statistical Office of the Republic of Serbia: Economic trends, 2020 - Estimates (Statistical Release n. 354, 2020)

[33] Statistical Office of the Republic of Serbia: Trends, Quarter IV of 2020 (2021)

[34] Satistical Office of the Republic of Serbia: Trends, Quarter I of 2018 (2018); Trends, Quarter IV of 2020 (2021)

favourable position in the trade balance, while domestic trade decrease amounted to 5.9 percent. Export and import had the same dynamic in the first three quarters: they grew in Q1 (by 3.3 percent and 7.7 percent), decreased sharply in Q2 (by 19.9 percent and 20.2 percent), were stagnant in Q3 (decrease by 0.7 and 0.8 percent respectively), while in Q4 exports recorded a growth of 6.7 percent while imports decreased by 1.5 percent.[35] Inflation remained under 2 percent in all four quarters, while average inflation stood at 1.6 percent.[36]

In 2020, after surpluses in 2017 and 2018, and mild deficit in 2019, Serbia recorded **all-time high budget deficit in 2020 of 8.1 percent of GDP.**[37] The deficit, as in many other countries, was caused by massive public health expenditure, long-term insufficient investment in the national healthcare system,[38] fiscal and economic stimulus packages to the economy and individuals, and lower public revenue. Serbian deficit in 2020 was higher than the average for the EU 27 (6.9 percent of GDP), Albania (6.7) and Bosnia and Herzegovina (5.4 percent), at level with North Macedonia (8.2) and lower than in Montenegro (11 percent).

In response to the rising needs of COVID-19-related spending, 7-year Eurobonds worth 3 billion EUR were issued in May and November of 2020, at a rate of 3.4 percent. This has largely impacted the increase of **public debt** which **rose to 57.4 percent of GDP in 2020 from 52.0 percent in 2019.**[39] Accordingly, support measures and crisis response expenditures in the rest of the Western Balkan countries have widened their budget deficit and in some of them pushed public debt toward record-high levels in 2020.[40] The debt increase was lower than for other countries in the region, and lower than the EU-27 average of 13 percentage points (increase from 77 to 90 percent of GDP).

---

[35] Statistical Office of the Republic of Serbia: Trends, Quarter IV of 2020 (2021)

[36] Statistical Office of the Republic of Serbia: Trends, Quarter IV of 2020 (2021)

[37] National Bank of Serbia: Macroeconomic Developments in Serbia (2021)

[38] Republic Of Serbia Fiscal Council: Assessment of the Proposed Supplementary Budget for 2020 and Recommendations for Fiscal Policy in 2021 (2020)

[39] Ibid.

[40] World Bank Group: Western Balkans Regular Economic Report No.19, Subdued Recovery (2021)

2. Main changes in the labour market and job characteristics

In this chapter we analyse the changes in the main labour market outcomes and job characteristics before (2019) and after (2020) the effects of epidemic occurred. We use the Labour Force Survey (LFS) for Serbia, which provides nationally representative data on the labour market. Besides analysing the overall trends in 2019 and 2020 on the full nationally representative dataset, we also exploit the panel structure of LFS; which enables us to follow individuals in the same quarters for two years (for example, in the first quarter (Q1) of 2019 and the first quarter of 2020), to analyze the labor market dynamics between 2019 and 2020, and to compare this with 2018 and 2019.

Besides analyzing main labour market indicators within this chapter we disaggregate the analysis by focusing on vulnerable workers in the context of COVID-19 crisis. These include 1) informally employed, who are working without contract and are easily dismissible, 2) workers with temporary contracts, for whom employers do not face severance payments if their contracts are not extended; as well as 3) those working in small enterprises and 4) self-employed, because these enterprises are more susceptible to cessation of work in turbulent times, due to lower liquidity.

Additionally, during the initial phase of the pandemic some sectors were labeled as "non-essential", and it was suggested that their activity should be stopped in order to prevent the spread of the virus. They were viewed particularly risky as in these sectors there is a frequent direct contact between service providers and consumers (accommodation and food services, trade, transport, arts) or where large numbers of workers work together in a small workplace (manufacturing, real estate, administrative activities).[41] Typically, in these "non-essential" sectors, workers with vulnerable jobs (informal, temporary workers etc.) are also more frequently employed and these multiple vulnerabilities threatened to create further labor market distortions.

2.1. Employment and unemployment changes during COVID-19 pandemic

The main labour market indicators in Serbia did not show a worsening in 2020. The employment rate (population 15+) stagnated (i.e. increased by 0.1 percentage points), while the unemployment rate decreased by 1.4 percentage points (p.p.) to 9% in 2020, however with increase in inactivity of 0.6 p.p. The labour market trends in recent years in Serbia have been favourable, with employment rate rising from 2014 until 2019, and unemployment rate falling in this same period (Figure 2.1). Therefore, **the stagnation of the employment rate can be interpreted as an interruption of the favourable trends in the former period**.

From the comparative perspective, the unchanged employment rate in Serbia is more favourable outcome than the one in the EU, where employment rate decreased by 0.8 p.p., or the neighbouring countries which recorded a decrease in employment rate ranging from -0.2 p.p. in North Macedonia to -4.5 p.p. in Montenegro.

---

[41] https://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/documents/briefingnote/wcms_745963.pdf

Figure 2.1.: Main labour market indicators trends in Serbia, 2016-2020
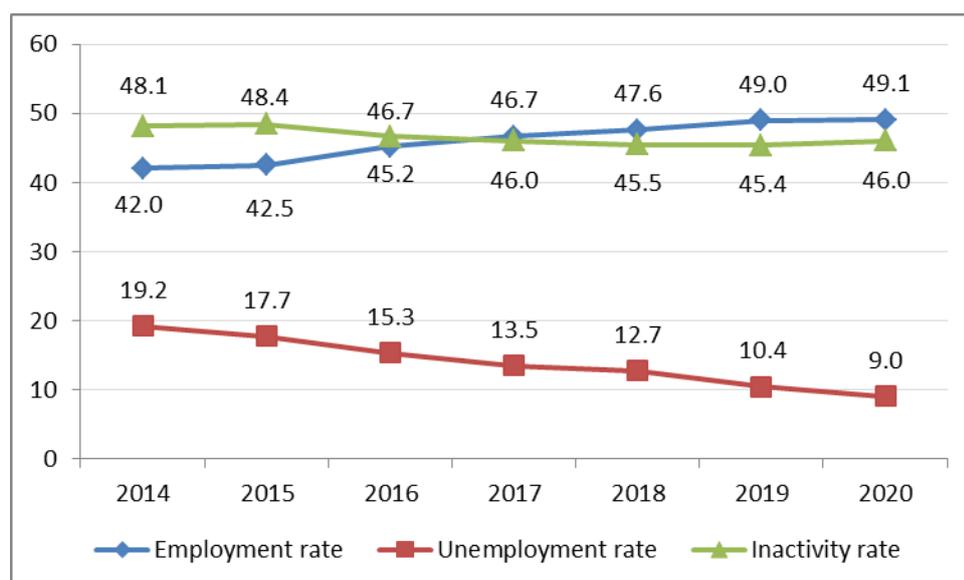
Notes: Population 15 years and older. Source: LFS data, SORS database.

However, there was a clear, temporary effect of COVID-19 on employment in second quarter (Q2) of 2020. While long-term employment increase from the previous years continued in Q1 2020 (year-on-year growth of 1.3 p.p., compared to Q1 2019), in Q2 2020, there was a decrease in employment rate of 1.0 p.p., (or about 72 thousand employees) likely caused by containment measures aiming to prevent the spread of COVID-19 and the resulting decreasing economic activity. In the last two quarters of 2020 employment stabilized, with the employment rate unchanged compared to the same quarters of previous year (Figure 2.2). In absolute numbers, contrary to the slight increase in employment rate, in 2020 there was a slight decrease in the number of employed by about 6,000 in comparison to 2019, which is smaller than the decline in the size of the population aged 15 or more (by about 30,000).

The decrease in unemployment rate of 1.4 p.p. in 2020 is mainly transferred to an increase in the inactivity rate. The unemployment decrease is the result of a long-term decreasing trend which continued in Q1 2020 (year-on year unemployment rate decrease was 2.4 p.p.), but also of an additional decrease in Q2 2020 (by 3 p.p.). The decrease in Q2 however coincided with the growth of inactivity rate (Figure 2.2). The analysis of LFS panel indicates that 43.3% of those unemployed in Q2 2019 were inactive in Q2 2020 (compared to only 26.2% for Q2 2018/Q2 2019). **In other words, the reduction of unemployment in Q2 2020 can be explained by lower job search activity during the lockdown, rather than by an increasing employment.**

In the last two quarters the unemployment has stagnated (Figure 2.2), indicating reactivation of unemployed who were inactive during the lockdown. The temporary nature of the inactivity increase is confirmed by the analysis of reasons for inactivity, which indicate that the number of those who report "other reasons" (this was probably the answer people gave when they meant that pandemic prevented their job search) has increased by about 200 thousand people in Q2 2020, while the number of those who were discouraged about the job search remained at the same level as in 2019. In Q3 2020 and Q4 2020 the number of "other

reasons" stabilized to the level from 2019, as did the overall number of unemployed and inactive.

**Figure 2.2.: Annual changes in the main labour market indicators (in p.p.), by quarter**
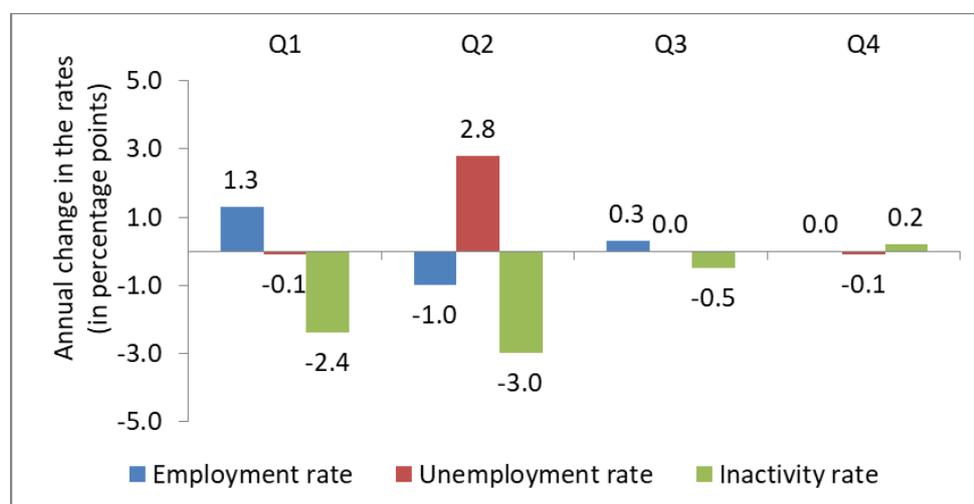
Notes: All indicators are compared to the same quarter of the previous year. Source: LFS data, SORS database.

Although employment in 2020 stayed at approximately the same level as in 2019, the analysis of reasons to stop working shows some interesting trends between the years. The number of those who were dismissed from work increased by about 14 thousand, while the number of those who stopped working because of the end of a temporary job within the calendar year decreased significantly in Q3 and particularly in Q4. These results, coupled with unchanged number of employees these quarters, indicate that some temporary jobs that existed in Q2 and Q3 of 2019 were missing in the same quarters of 2020. Overall it seems that the **decrease of employment in Q2 in 2020 was partially due to dismissals and partially due to lower availability of seasonal jobs** in this quarter.

Although the employment level remained the same, in 2020 there were significant changes in the structure of the employment. **Employment stagnation in 2020 is the result of a simultaneous annual increase of formal employment by about 50,000 and an annual decrease in informal employment[42] by about 55,000 workers** (Figure 2.3). The employment in formal and informal employment is essentially different, as those working in informal employment are working without contracts and/or are working in unregistered business, and both of these groups were not eligible for the support measures provided by the government and are particularly vulnerable in the times of economic turmoil. Therefore, in the next part of the text we analyse trends in formal and informal employment separately.

---

[42] According to the ILO definition (adopted by SORS for LFS data), informal employment represents wokers working in unregistered companies, those working in registered companies, but without contract or social and pension contributions paid, and the unpaid family workers.

Figure 2.3.: Annual changes in the number of employees in formal and informal employment (in thousands), by quarter
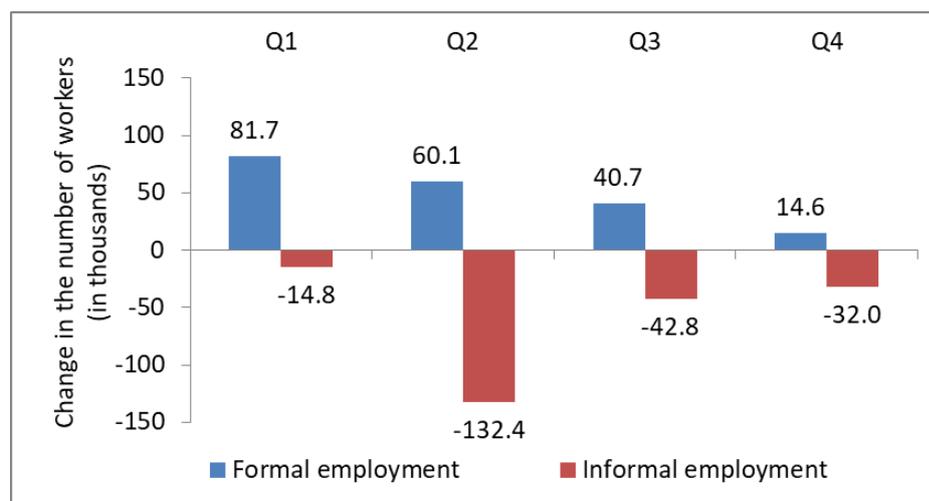
Notes: All indicators are compared to the same quarter of the previous year; i.e. we compare Q1 2020 to Q1 2019, Q2 2020 to Q2 2019 etc. Population 15+. Source: LFS data, SORS database.

2.1.1. Changes in the formal employment

Increased formal employment in 2020 is caused by the combination of the long-term trends in recent years, higher job security and government retention measures which were directed only to formal jobs. Serbian labour market has been characterised by formalization in recent years, as the share of informally employed in total employed had decreased by about 1.3 p.p. annually. The increase in the formal employment of about 50,000 roughly corresponds to increase of the registered employment, which increased by about 40,000 workers.[43] The increase of formal employment was the highest in Q1 2020, and from there it had slowed down, probably due to lower economic activity (Figure 2.3).

Further analysis of formal employment in 2020 suggests that **within formal employment the number of persons working with temporary contracts** (including seasonal and occasional work) **decreased by about 24,000 workers**, with the decrease being particularly high in Q2 2020 and Q3 2020 (Figure 2.4, left). On the other hand, the number of workers with permanent contracts increased by about 70,000. Analysis within the LFS panel data suggests that the decrease in the number of formal workers with temporary contract in 2020 stemmed from 1) lower inflow of temporary workers from those without work in 2019ِ 2) higher transfers from temporary work to inactivity/unemployment, and 3) higher transfers from temporary to permanent employment, compared to the 2018/2019 transitions. This suggest that the number of temporary workers decreased due to lower number of available temporary jobs (lower inflow from unemployment/inactivity from the previous year) and more dismissals/quits form temporary work, after which part of temporary workers was out of work and part of them found permanent employment.

---

[43] Source: SORS. Registered employment is based on the combined data from Central Register of Compulsory Social Insurance (CRCSI) and Statistical Business Register (SBR)

From the sectorial perspective, **Accommodation and food service activity** (AFSA) **sector (NACE sector I) was hit the most, as the annual decrease in formal employment in this sector in 2020 was about 7,200 workers**. In Q2 2020 the decrease was the strongest in Finance (sector K) and Transport (sector H), with about 11 and 9 thousand workers less than in 2019 (Figure 2.4, right). However, Finance and Transport returned to the previous years' levels of employment in Q3/Q4 2020 while the decrease in employment in AFSA persisted even in Q4 2020. **Conversely, sectors such as Construction (Sector F), Trade (Sector G) and Information and Communication (Sector J) had higher number of employees in formal employment than in the previous year** (by about 15 thousand workers), although Trade also recorded a temporary decrease in Q2 2020.

Figure 2.4.: Changes in the formal employment: change in the number of employees (, in thousands) by type of contract (left) and sector of activity (right panel)
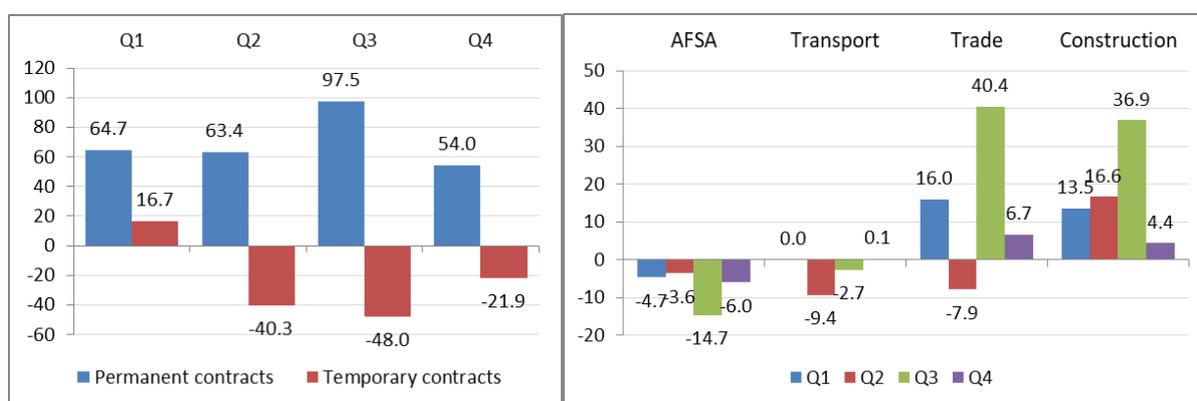
Notes: Number of employed compared to the same quarter of the previous year. Population 15-64. Source: LFS data, own calculation based on SORS data.

The data do not indicate a decrease in the number of self-employed and workers in small firms in formal employment in 2020, although they were considered to be more vulnerable, due to their lower liquidity. On the contrary, the number of self-employed in formal employment increased by about 3,000 workers, while the number of workers in small firms (with 10 workers or less) increased by about 17,000.[44] **One of the factors that prevented the loss of employment in these groups were Government's employment retention measures, as micro, small, and medium-sized enterprises, were eligible for the minimum wage assistance for every worker for three months** as long as they haven't dismissed more than 10 percent of workers between 15 March and 10 April. However, the compensation was the same for all sectors and regardless of the financial results of the firm. For some sectors these funds, in fact seem to have been used for further employment as the biggest increase in the number of workers in small firms was recorded in Q2 in the period of the lowest economic activity.

---

[44] Own cacluation based on the LFS data.

2.1.2. Changes in informal employment

The number of workers in informal employment in 2020 had decreased by about 50,000, stemming from decreases in both wage- and self-employment, by about 30,000 and 21,000 respectively. **The biggest decrease in informal employment in 2020 was observed for Q2** in which about 132 thousand fewer workers were working comparison to the same period in 2019 (Figure 2.5, left), about a quarter of total number of persons employed in informal employment in Q2 2019. This was particularly true for the self-employed, while, the decrease in the number of employees working informally was high in both Q2 and Q3 2020 (Figure 2.5, left). The number contributing family workers also decreased in 2020 by about 4,000. **From the sectorial perspective, the decrease in informal employment was the highest in Agriculture, where about 30,000 jobs were lost during 2020**, with the highest decrease in Q2 2020. Additionally, trade, AFSA and arts and entertainment sectors were hit the most.

Figure 2.5.: Decrease in the number of employees in informal employment by status (left panel, in thousands) and sector of activity (right panel, in thousands)
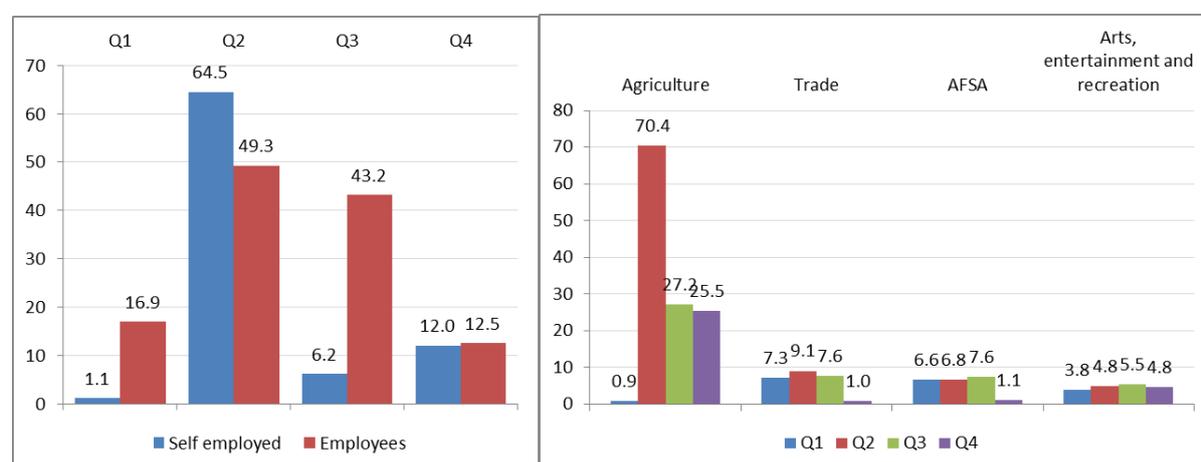
Notes: Number of employed is compared to the same quarter of the previous year; i.e. we compare Q1 2020 to Q1 2019, Q2 2020 to Q2 2019 etc. Source: LFS data, own calculation based on SORS data.

The reduction in the number of informal employees in 2020 seems to be the consequence of two factors. Firstly, as mentioned before the **share of informal workers has been decreasing since 2016** (by about 1.3 p.p. or about 23,000 workers per year). The decrease of number of informal workers in Q1 2020, before the pandemic hit, suggests that this trend continued in 2020. Secondly, LFS panel data suggest **lower inflow of new informally employed from formal employment, unemployment and inactivity** in Q2, Q3 and Q4 of 2020. The share of transitions from other statuses to informal employment in 2020 represented about 35% of total informally employed, significantly lower compared to 2019 when this share was on about 43%.[45] The lockdown and the subsequent COVID-19 outbreaks probably prevented workers from working on some informal jobs they are typically working on during this period.

---

[45] Own calculation based on the LFS panel data (transition analysis)

Additionally, data suggest that those employed informally in Q2 2019 transitioned to formal employment (27.4% of them) or unemployment/inactivity (17.7%) in Q2 2020 more frequently than informal workers in the previous period (23.3% and 15.0% respectively for Q2 2018/Q2 2019 transitions). However, this is not true for Q3 and Q4 in 2020, where in fact we observe the opposite trend: the transitions from informal employment to formal employment/inactivity were less frequent than in the previous year.[46]

2.2. Changes in working hours and working from home

Actual working hours in Serbia in 2020 decreased by 1 hour per week. This change was both due to the increase in the share of the workers who were absent from work during[47] and decreasing working hours of those who were at work. The overall decrease was the strongest in AFSA (by 4.6 hours per week, compared to 2019), Arts, entertainment and recreation (by 3.1 hours) and Construction (3 hours).

Figure 2.6.: Change in the actual working hours with and without those absent from work (left panel) and the share of workers absent from work (right panel)
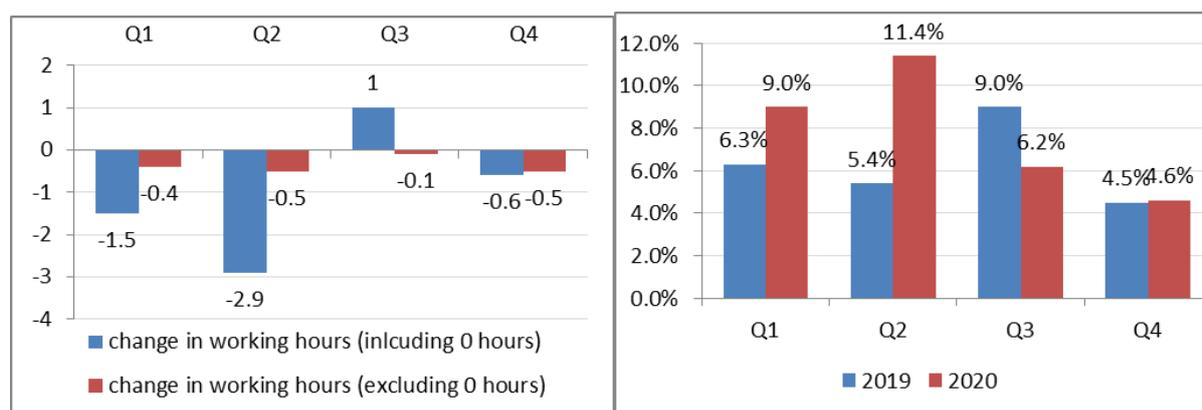
Notes: All indicators are compared to the same quarter of the previous year; i.e. we compare Q1 2020 to Q1 2019, Q2 2020 to Q2 2019 etc. Source: LFS data, own calculation based on SORS data.

The decrease in weekly hours worked in 2020 was most prominent in Q2 when the lockdown measures were in place. **The overall decrease was about 3 hours** (Figure 2.6, left), **mainly due to an increase in the share of workers absent from work**. The share of the absentees decreased by 6 percentage points, compared to the previous year (Figure 2.4, right), while in the same period weekly hours of those who went to work were shorter by about 0.5 hours (Figure 2.6, left). The analysis of reasons for being absent from work suggest that **in Q2 2020 there were about 204 thousand workers who were absent from work due to low business activity**, while in Q2 2019, only about 5,000 listed this reason (Figure 2.8). Increase in the share of workers absent from work in Q2 was prominent in almost all the sectors, although the strongest in AFSA, Arts, entertainment and recreation, and Crafts,

---

[46] Own calculation based on the LFS panel data (transition analysis)

[47] In line with the LFS methodology, those who are absent from work are defined as persons reporting zero actual working hours within the reference week.

repairs and service organisations. In these sectors, the share of workers who were absent from work in Q2 2020 was about 20 percent higher than in Q2 2019 (Figure 2.7).

The decrease in working hours was also prominent in Q1 2020 (about 1.5 working hours per week less than in Q1 2019), again mainly due to increasing share of workers absent from work (Figure 2.6, right). The **main reason for the increase in the number of absent workers was again low economic activity, with about 68 thousand workers** listing this reason in Q1 2020, compared to 12 thousand in Q1 2019. As lockdown started within Q1 2020, on March 15th, these absences probably happened during that period with the same sectors being hit the most as in Q2 (Figure 2.7).

Figure 2.7.: Change in the share of workers absent from work by sectors of activity
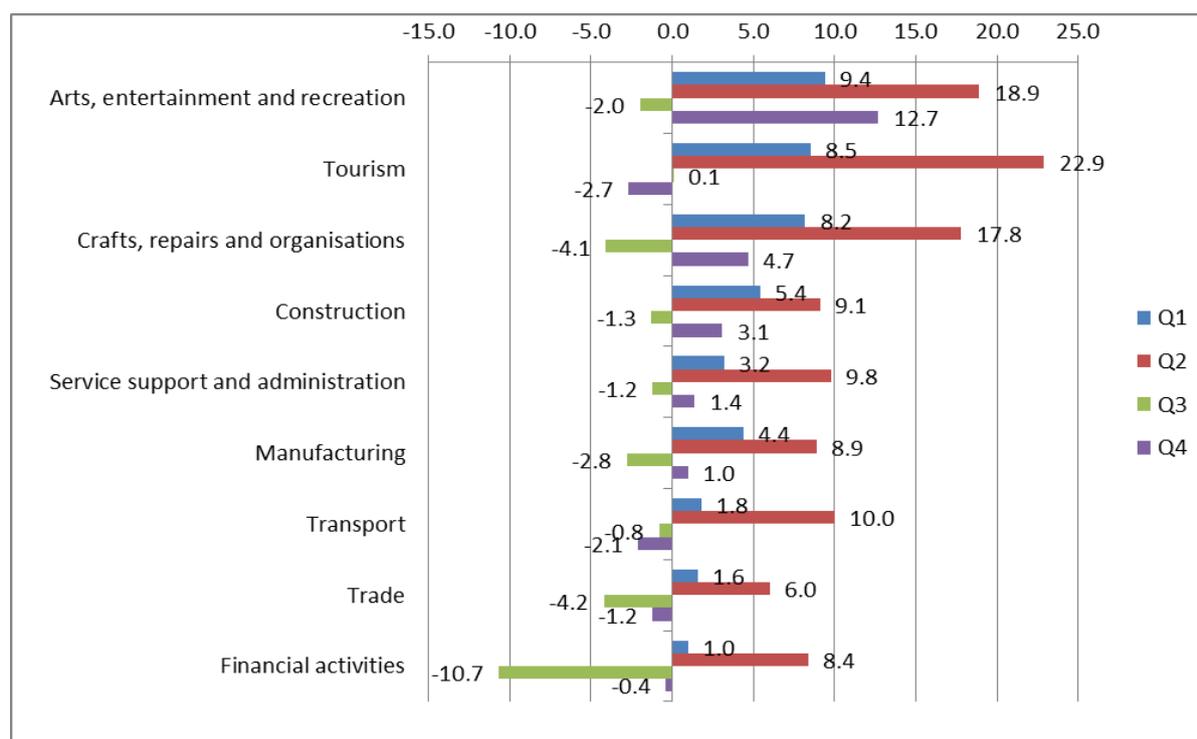
Notes: Difference in share of workers absent are compared to the same quarter of the previous year; i.e. we compare Q1 2020 to Q1 2019, Q2 2020 to Q2 2019 etc. Source: LFS data, own calculation based on SORS data.

In Q3 2020 working hours were on average higher than in the same quarter of 2019, **due to lower share of those absent from work than is typical for third quarter of the year**. The data suggest that this is probably due to the **fact that some workers took (or were suggested to take) their holidays during the lockdown**, instead of during July and August – typical holiday months which are in Q3. As can be seen from Figure 2.8, **in Q3 2020, only about 66 thousand workers were on holidays within the reference week, compared to 157 thousand in Q3 2019**.[48] This trend was particularly pronounced in Finance, Trade, and Crafts, repairs and service organisations, but also in Manufacturing, which were probably aiming to make up for the losses in Q2.

[48] The analysis of reasons for being absent from work is based on the data for the reference week, i.e. includes only workers who were absent from work within the reference week. Typically, within a firm, workers take Holidays in different weeks in order to preserve the business activity. The total number of workers who take holidays during Q3 in regular circumstances, therefore is much higher.

Finally, in Q4 2020 the working hours were again lower, but mainly due to a decrease of actual working hours, while the share of those who were absent from work was the same as in 2019. However, some sectors such as Arts, entertainment and recreation and Crafts, repairs and service organisations and Construction also recorded an increase in absent workers.

While there were no differences in changes in working hours between formal and informal employment or depending on the size of the firm, there were **significant differences depending on the employment status and type of contract**. **Self-employed had the biggest losses in the working hours**, as on average they lost about 2.7 working hours per week in 2020, while the employees worked about 1 hour less in 2020 compared to 2019. For both groups, we observe the same pattern as for the overall trends: losses in working hours were mainly due to higher share of workers absent from work, while the biggest losses were observed in Q1 and Q2, with an attempt to make up some of the lost time and income in Q3, with reduction in holidays days. Interestingly, there were no significant changes in working hours of farmers or unpaid family members, for either of the quarters.

Among employees, the **biggest decrease in terms of working hours was for seasonal and occasional workers, who on average worked 4.2 hours per week less in 2020 than in 2019**. Out of this approximately half was due to the loss in actual working hours (by 2.2 hours), while the other half was due to increased share of workers absent from work. The decrease in hours worked for permanent and temporary workers was about 1 hour per week.

Figure 2.8.: Workers absent from work, by reason of absence (in thousands)
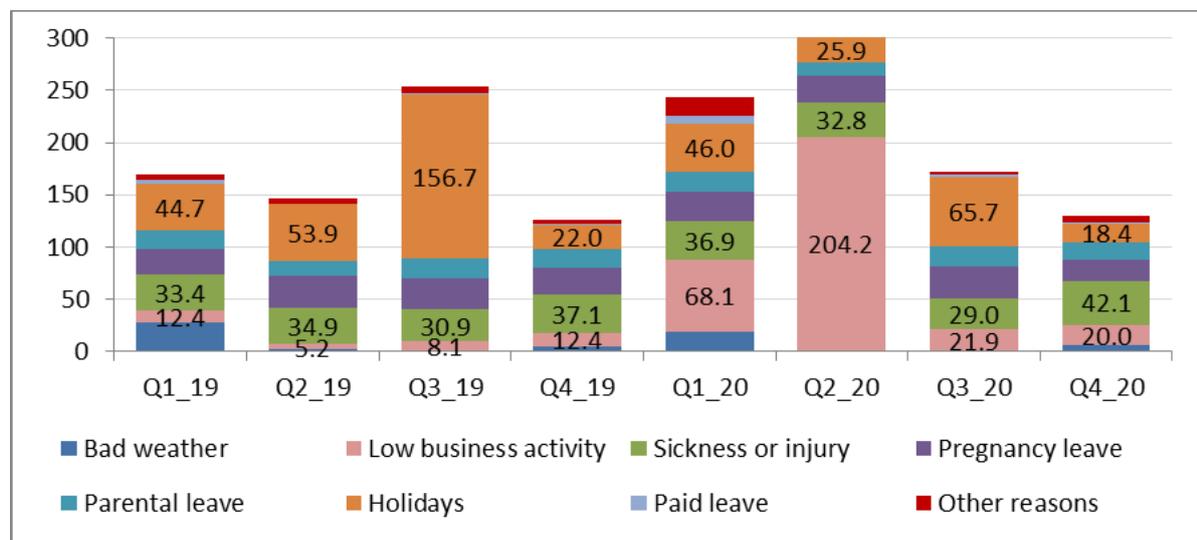
Source: LFS data, own calculation based on SORS data.

Figure 2.8 indicates that there were no prominent differences in taking sick leave as a reason for being absent from work between the years. **The only substantial increase was in Q4 2020 where about 5,000 workers more were absent due to sick leave**. This coincides with the highest number of COVID-19 recorded cases during 2020.

2.2.1. Work from home

Overall, **the share of workers working from home in 2020, had increased by about 2 p.p. compared to 2019**: While this share was about 5.4 percent in 2019, in 2020 it increased to about 7.5 percent. This increase was due to a decrease in the share of those who never work from home by about 2 p.p., while the share of those who sometimes work from home remained the same. **This indicates that large majority of workers simply transitioned from never working at home to working from home frequently**. This trend, as most other indicators, had a clear pattern over quartiles and was related to the severity of lockdown measures (Figure 2.9, left). **Working from home was most frequent in Q2 2020, when 4.4 p.p. workers worked more frequently from home than in 2019**, while in Q1 and Q3 2020 this increase was about 2 p.p. with respect to the corresponding quarters in 2019. In Q4 2020 on average there were no changes (Figure 2.9, left).

Increase in the share of workers who are working from home was most frequent in three sectors: Information and communication (increase was by 18.8 p.p. on average in 2020 compared to 2019), **Education** (by 14.5 p.p.) **and Financial and insurance activities** (by 12 p.p.). In other sectors the increase of the share of workers working from home was less than 4 p.p.. While Information and communication and Education generally had comparably high shares of workers working from home even in 2019 (12 and 11 percent respectively), in Financial sector working from home was very rare in 2019 (about 1 percent on average). Therefore, for this sector working from home probably required more adjustments than for the other two, and this is why probably the transfer of workers working from home started "slowly", as evidenced with lower increase in Q1.

Figure 2.9.: Changes in the working from home by quartiles for all respondents (left, in percentage points) and changes in the share of workers working from home frequently in industries where the changes were the highest (right panel, in percentage points)
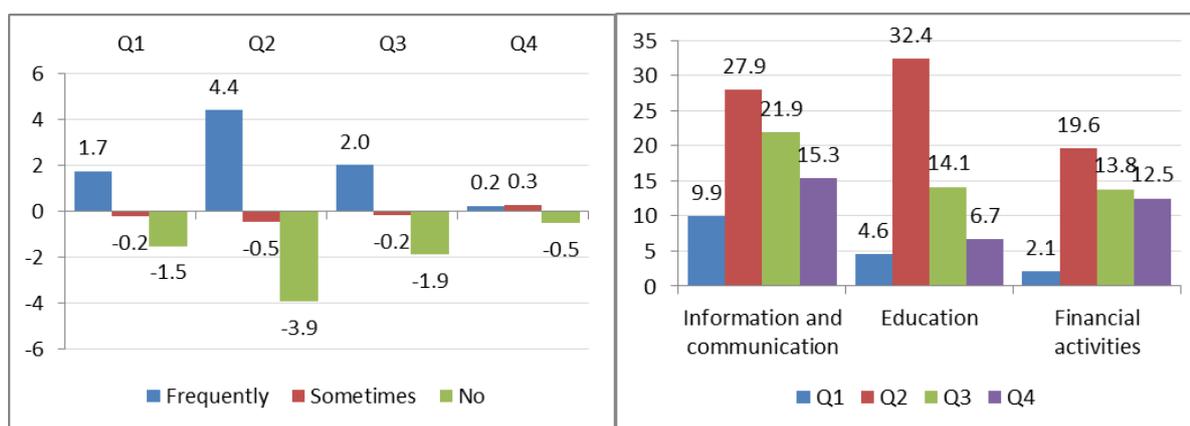
Source: LFS data, own calculation based on SORS data.

While workers in other sectors, majorly returned to regular work from office, these three sectors continued to have an increase in the share of workers working from home even in Q4 2020, suggesting that some workers from these three sectors continued to work from home possibly even after 2020. Interestingly, while Education sector had the highest increase of workers working from home frequently in Q2 2020, in Q4 2020 the increase was only 6.7 p.p., which even with an increase of about 4 p.p. of workers working sometimes from home

seems low as many schools and universities transferred to online teaching. However, it is possible that teachers went to office to conduct the online classes as there was no lockdown.

By other employment characteristics, increase in the share of workers working from home was more prominent in formal (increase by 2.6 p.p. compared to 2019 on average) than informal employment (by 0.2 p.p); more frequent in public (by 4.9 p.p.) than in private formal sector (by 1.5 p.p.); and present among employees (by 3.6 p.p.) while self-employed (excluding farmers) remained at the same level of working from home as in 2019, albeit starting from already high levels of work from home (about 13 percent in 2019).

Wages[49]

Compared to 2019, real growth in net earnings in 2020 was 7.7 percent.[50] The growth was approximately equal in all quarters. The wage growth in 2020 was at least partially the consequence of the increase in the net minimum wage that was introduced at the start of the year. The minimum wage grew from 155.3 RSD in 2019 to 172.5 RSD per hour i.e. by about 11.1 percent.[51]

2.3. National Employment Service data on formal unemployment and unemployment benefit recipients

Additional perspective of the labour market situation in Serbia during the COVID-19 pandemic can be gained through the lens of the National Employment Service (NES) data. The NES holds a register of all formally unemployed persons and recipients of unemployment benefits. In this section we show and discuss the monthly evolution of the number of unemployed, the number of unemployment benefits recipients and the number of newly employed from NES register.

Historically, the number of the registered unemployed has been decreasing since 2014, and this trend continued **in 2020 as the number of registered unemployed was lower than in 2019 by about 20,000 workers** (reduced by about 4 percent). However, **this decrease was much lower than the one in the previous 3 years**, which averaged at about 60,000 reduction per year[52] In Figure 2.10, we show the evolution of total registered unemployed and the evolution of newly registered unemployed during 2019 and 2020. These trends suggest that in 2019 there was a reduction in the number of unemployed over the year while in 2020 the total registered unemployed remained stable throughout the year with a minor increase from May to June (left panel, Figure 2.10). These findings are consistent with the main findings from the LFS data which suggest that labour market indicators did not show a worsening in 2020, but that the favorable trends from the previous years have been interrupted by COVID-19 pandemic. Furthermore, the analysis of LFS data suggests that the

---

[49] LFS data on wages cannot be analysed as in 2020 the data include significantly higher percentage of the missing values (while in 2019 24.9% of workers refused to answer the question this percentage in 2020 was 36.1%, i.e. by about 2,500 respondents), which makes the comparisons unreliable.

[50] Statistical Office of the Republic of Serbia: Trends, Quarter IV of 2020 (2021)

[51] Ministry of Labor, Employment, Veterans and Social Affairs: The Report on Implementation of the National Employment Action Plan for 2020 (2021)

[52] http://www.nsz.gov.rs/live/digitalAssets/15/15708_bilten_nsz_januar_2021.pdf (Serbian only)

decrease in the number of registered unemployed is likely due to lower job search and higher inactivity rather than an increase in employment.

The monthly registration of new unemployed shows that 2019 and 2020 started off at similar levels in the first two months of the year. Then **there was a sharp drop of new unemployed from March until May 2020 followed by an increase in June**, which coincides with the period in which the state of emergency was implemented. One potential explanation for the drop is that **people registered to a lesser extent with the NES because of containment measures and because they did not expect that new jobs were opening in this period**. This is consistent with the reduction of unemployment rate and inactivity rate increase that occurred in Q2 2020 according to LFS data. The number of new registered unemployed stabilized in the second half of the year, however compared to 2019 towards the end of the year the number of new unemployed in 2020 on a monthly basis was slightly higher. Again the drop of new registered unemployed could be explained by a lower propensity to register with NES in periods when the infection rates were high (as was the case towards the end of 2020).

Figure 2.10.: Total and newly registered unemployed, 2019 and 2020
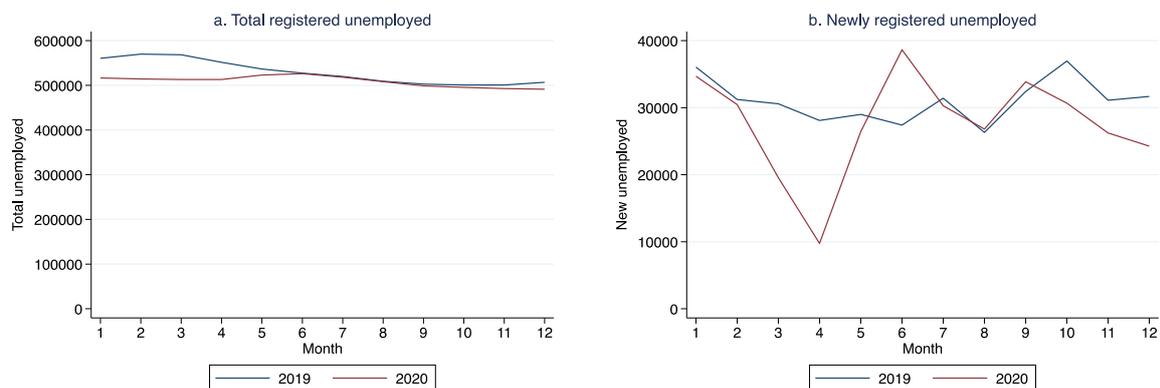
Source: Own calculation based on NES data.

We turn now to the number of unemployment benefit recipients. The number of the benefits recipients has been decreasing since 2013, and this trend continued in 2020. **In 2020 the number of unemployment benefit recipients was about 32,000, i.e. lower by about 3,000 than in 2019**.[53] This decrease was similar to the numbers in the previous year. Given that the formal (or registered) employment continued to grow in 2020, and that the dismissal from formal employment (after at least 1 year of tenure) is a prerequisite for receiving unemployment benefit, the continuation of the long-term decreasing trend of the unemployment benefit recipients is not surprising. On the other hands, vulnerable parts of the labour market that have lost jobs in the pandemic: informal workers, temporary contract, seasonal and occasional workers could not be protected by this mechanism.

Left panel of Figure 2.11 indicates that in both years there was a reduction in the number of recipients throughout the year. The right panel of Figure 2.11 shows new recipients and there we observe a sharp increase in March 2020 when the hard lockdown was introduced and

---

[53] http://www.nsz.gov.rs/live/digitalAssets/15/15708_bilten_nsz_januar_2021.pdf (Serbian only)

there is an additional increase in July 2020. In the second half of the year the monthly trends followed a similar pattern in 2019 and 2020. As most job losses happened in Q2, this indicates that the unemployment benefit was utilized as a mechanism of income stabilization after a job loss to a certain extent. Overall, however the number of unemployment benefit recipients was reduced, as the formal employment stabilized by the end of the year.

Figure 2.11.: Total and new recipients of unemployment benefits, 2019 and 2020
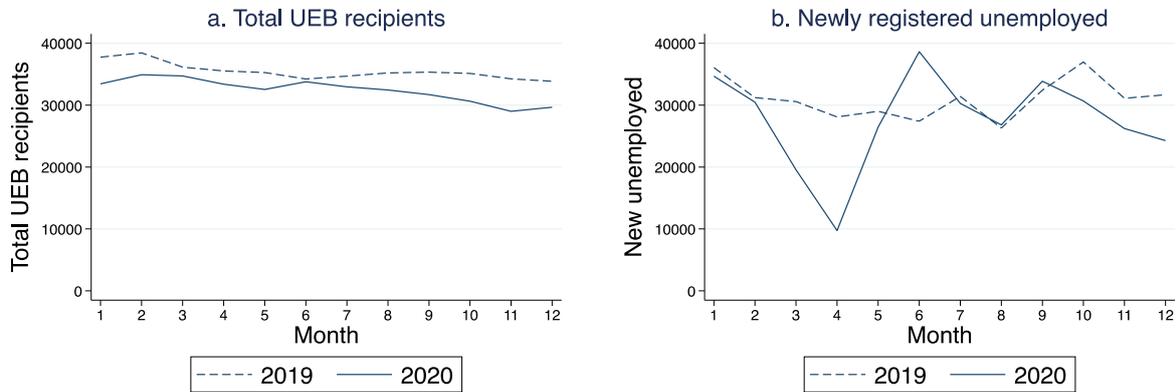
Source: Own calculation based on NES data.

Finally, the NES administrative data has information on how many people from the NES unemployment register found employment and these numbers are shown in Figure 2.12. We see that in 2020 fewer people found employment compared to the same months in 2019. In particular, there was a drop in the months of the lockdown (March to May) and in September.

Figure 2.12.: Number of employed from NES register, 2019 and 2020
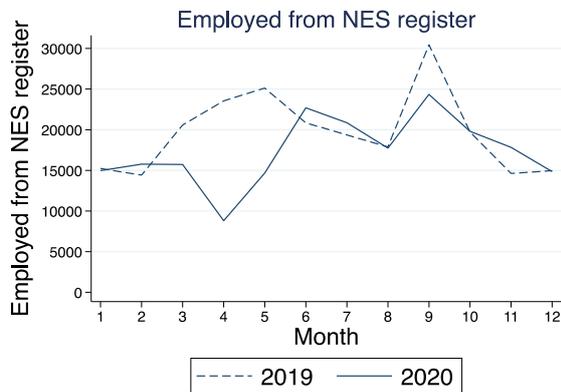
Source: Own calculation based on NES data.

3. The position of vulnerable groups on the labour market

This chapter studies the labour market situation during the COVID-19 pandemic of the following five vulnerable groups: youth, female, people with low educational attainment, people living in Southern and Eastern Serbia and rural population. We apply the difference-in-difference methodology to understand whether these vulnerable groups were more affected during the COVID-19 pandemic than the rest of the workforce. We study the labour market outcomes at the quarterly level in order to capture the effects in different phases of the pandemic and focus on three labour market outcomes: employment, absenteeism and hours worked. Five vulnerable groups are identified based on the economic literature and the Serbian context, as the groups whose labour market response could be different than the response of the majority of the population and we examine their labour market situation during the pandemic in 2020.

Young people are particularly vulnerable as economic downturns can have long-term effects on their future employment and incomes. A large literature examines the impact of graduating during an economic downturn (Kahn 2010, Genda et al. 2010, Oreopolous et al. 2012, Raaum and Røed 2006) and it finds that individuals who graduate in these times experience a scarring effect due to poor initial firm-worker matching and skills depreciation. They can have lower earnings for up to 10 years compared to individuals who graduated in better times. Not only young people who enter the labour market are affected, but also those who had a job when the crisis hit can be affected if they did not secure yet a stable job. Young people work more often in sectors that are more affected by the crisis, such as Accommodation and food services (AFSA) and trade (Verick, 2009) or they can be the first ones to get laid off in the presence of tenure based mandatory severance pay. We define youth as those aged 20-29.[54]

There are many reasons to be concerned about the position of **women** on the labour market during and after a pandemic. School and child care closures increased the needs for parental child care and this burden was mainly born by the women (Alon et al., 2020). In addition, the household chores, typically more frequently performed by women, such as cleaning and cooking increased as the whole family remained at home due to the containment measures. Overall, the evidence from other countries shows that women bore a larger burden of housework (Del Boca et al., 2020; Farré et al., 2020) and this could have potentially a negative impact on the female labour supply.

There are several reasons to consider **workers with low education** to be more vulnerable during a pandemic. First, they are more likely to work in the informal sector which does not offer any employment protection and even when they have a formal contract, they are more likely to hold seasonal or temporary contracts in comparison to more educated workers. Second, aside from essential services, low educated workers are more likely to be working in sectors affected by shutdowns (e.g. tourism and hospitality, etc). Third, low educated workers have, on average, lower savings than skilled workers and even small income shocks can make them enter into poverty.

---

[54] The Eurostat defines youth as young people between 15 and 29 years old. We exclude the age group 15 to 19 from our analysis because most of these young people are still in education. According to SoRS (2021b), the enrolment rate in secondary school was 87.5% in 2019.

We focus specifically on **Southern and Eastern Serbia (SES region)** as this is the poorest of the four Serbian regions (excluding Kosovo). SES region had in 2018 the lowest employment rate and the highest unemployment rate among the four regions (SoRS, 2018). While 21.6% of the population lives in this region, it contributes with only 13.8% to the GDP of Serbia. Finally, 15 out of 19 devastated local self-governments[55] in Serbia are located in this region. We consider the **rural** population to be potentially vulnerable because a large share of this population works in agriculture which could have been potentially disrupted due to the severe lockdown in Serbia. Additionally, the rural population is generally low educated and holds only temporary or seasonal jobs with a low job protection which makes them more vulnerable to income shocks.

We further motivate the choice of vulnerable groups by analysing the job characteristics of these five groups in 2019. As suggested previously (chapter 2), the following job characteristics are considered to reflect vulnerable employment: informal employment, temporary employment, employment in small enterprises,[56] self-employment and employment in AFSA sector.

Table 3.1. shows to which extent each vulnerable group is exposed to labour market shocks resulting from vulnerable job characteristics. Compared to the older workers, young people are more likely to be informally employed, temporary workers and to work in the AFSA sector. Females are more likely than males to work in the informal sector and in the AFSA sector. Workers with low education and those residing in rural areas are vulnerable because, compared to more educated workers or urban population, they are more likely to be informally employed, to have temporary contracts and to work in small enterprises. Finally, workers in SES region are more likely to be working informally than workers from other regions.

Table 3.1: Job characteristics of vulnerable groups

VARIABLES	Informal employment	Temp. workers[+]	Small-enterprises[+]	Self-employed[+]	AFSA sector[+]
Young	0.031***	0.22***	-0.036***	-0.060***	0.028***
	(0.051)	(0.054)	(0.078)	(0.0053)	(0.025)
Female	0.017***	-0.003	-0.001	-0.049***	0.010***
	(0.034)	(0.044)	(0.051)	(0.0030)	(0.019)
Low education	0.200***	0.067***	0.120***	-0.055***	-0.026
	(0.038)	(0.076)	(0.080)	(0.0057)	(0.033)
Rural	0.120***	0.015***	0.099***	-0.031***	-0.070***
	(0.035)	(0.046)	(0.052)	(0.0031)	(0.020)
SES region	0.032***	0.002	-0.002	-0.020***	-0.081***
	(0.037)	(0.050)	(0.058)	(0.0034)	(0.023)
Observations	43,500	29,894	35,825	35,825	35,825

Notes: This table estimates the likelihood that each vulnerable group is exposed to labour market shocks resulting from vulnerable job characteristics. Regressions are estimated with the probit model. + includes only formal workers. Standard errors in parentheses *** $p<0.01$, ** $p<0.05$, * $p<0.1$

---

[55] These are self-governments were GDP per capita is less than 50% of the national average GDP per capita.

[56] We define small enterprises as enterprises with 10 or fewer employees.

Interestingly, all vulnerable groups are less likely to work as self-employed (in formal employment) than their counterparts, and this would have decreased their vulnerability. However, as we have seen in Chapter 2 of this report, self-employed and small enterprises were not particularly hit during the pandemic, mainly due to generous employment retention subsidies to micro, small and medium enterprises (MSMEs) from the government.

This remaining part of this chapter is structured as follows. The next section discusses the sample and provides an overview of the labour market situation in 2020 with a focus on vulnerable groups. Afterwards we present difference-in-difference methodology that will be used to assess the effects of the COVID-19 pandemic on the labour market position of the vulnerable groups in Serbia and present the results from the econometrics estimates.

3.1. Data, sample description and the changes in the labour market position of vulnerable groups in 2020

Within this chapter main data source is the dataset from the Labour Force Survey, collected by the Statistical Office of the Republic of Serbia. In our analysis, we include the years 2019 and 2020 and limit the sample to individuals aged 20 to 64 years.[57] We use 2019 as a benchmark year (stable state), while 2020, the year in which the pandemic has started is considered to be the year of treatment. The overall sample for the analysis contains 129,986 individuals. Our three main outcomes of interest are (1) an indicator for being employed, (2) an indicator for being absent from work and (3) the actual hours worked (self-reported).[58] The descriptive statistics suggests that, compared to 2019, the employment rate for the 20-64 population was higher in 2020 by 0.7 percentage points, the likelihood to be absent from work was 1.5 percentage points higher in 2020 and the actual hours worked were by roughly 1 hour lower in 2020.

Turning now to individual level characteristics of the sample, we observe that there were no prominent changes in the sample between the years. Women represent about half of the sample, while in terms of age groups, close to 20% were aged 20 - 29, close to 60% fall in the age group 30 - 54 and the age group 55 - 64 is represented with slightly more than 20%. Most individuals have secondary education (approximately 60%), followed by tertiary and primary education, which make about 22 and 17 percent of the workforce respectively. Roughly 60% of individuals live in urban settings, 20% live in SES region and 36% of individuals had children aged 0 to 14 years.

---

[57] 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.

[58] We define employed persons 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). We define an individual to be absent from work if they are employed but worked 0 hours during the reference week in the survey. The actual hours worked are the self-reported hours of work during the reference week.

Table 3.2: Sample characteristics

	2020	2019
	N=60,479	N=69,507
Outcomes		
=1 Employed	65.9%	65.1%
=1 Absent from job	8.0%	6.5%
Actual hours worked	38.4	39.4
Individual characteristics		
=1 Female	50.1%	50.2%
Age groups		
20 - 29	18.8%	19.1%
30 - 54	57.6%	57.0%
55 - 64	23.5%	23.9%
Highest education		
Primary	16.6%	17.5%
Secondary	60.6%	60.2%
Tertiary	22.7%	22.3%
=1 Urban	59.5%	60.9%
=1 SES region	20.5%	20.6%
=1 Has children aged 0-14y	36.0%	36.0%

Notes: Data are presented as mean for continuous measures, and % for categorical measures. Detailed descriptive statistics of job characteristics are shown in Chapter 2 of the report.

Results from Chapter 2 suggest that employment trends in Serbia differed significantly within 2020. While in the first quarter employment rate increased (continuing a long-term increasing trend), in the second quarter employment rate decreased (by 1 percentage points) caused by containment measures aiming to prevent the spread of COVID-19. In the last two quarters of 2020 employment stabilized, with the employment rate unchanged compared to the same quarters of previous year. We consider the employment rate of the vulnerable groups by quarter in Figures 3.1. and 3.2.

The overall youth employment rate was by 0.9 percentage points lower in 2020 compared to 2019. With regards to quarterly data, we find that **the youth employment rate was lower in 2020 than in 2019 in all the quarters except in the first.** Youth employment rate (top left panel, figure 3.1) in the first quarter of 2020 was higher by 3.2 percentage points than in 2019, as a consequence of the previous favourable trends on the labour market and the fact that the labour market effects of the pandemic had not occurred yet in Q1. In the second quarter of 2020 the employment rate dropped sharply by 3.9 percentage points as a consequence of the state of emergency which was introduced in this period (for more details see Chapter 1 of this report). Although in the last two quarters of 2020 youth employment rate increased, it remained below the 2019 levels (by 1.and 1.1 percentage points in Q3 and Q4 respectively). In contrast, the employment rate of non-youth group (age 30 to 64) had in 2020 similar trend to the one from 2019, and actually marginally exceeded the employment rate from 2019 in all quarters.

Female employment has not decreased in 2020 and it has remained stable over the quarters,[59] while those with low education faced a significant decrease in employment in fourth quarter. For individuals with low education (Figure 3.1., bottom left panel), in the first three quarters we observe similar levels of employment as in the previous year. However, in the last quarter there is a sharp drop, and when compared to 2019 the employment rate of those with low education was lower by about 2.5 percentage points.

Figure 3.1.: Employment rate of vulnerable groups (youth, female and low education)
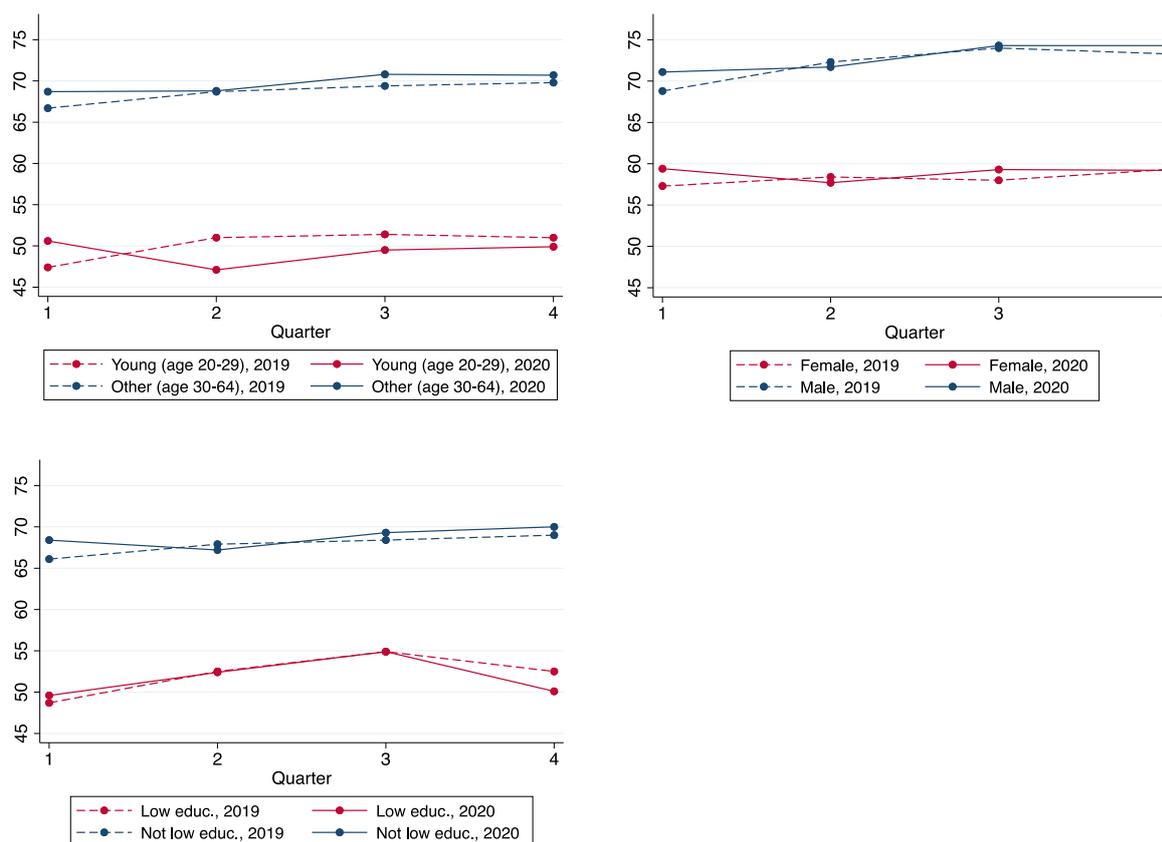
Notes: This graph shows the evolution of the employment rate of vulnerable groups (youth, female and low education) and their employment by quarter for the years 2019 and 2020. Source: Own calculations based on the LFS data.

In the region of Southern and Eastern Serbia in the first three quarters the employment rate exceeded the rate from 2019, however it recorded a drop compared to 2019 in the fourth quarter. The employment rate in rural areas in 2020 did not decrease compared to 2019. The employment rate in the SES region was higher in 2020 than in 2019 in first three quarters (Q1: +0.9 percentage points; Q2: +1.5 percentage points; Q3: +0.3 percentage points) and in the fourth quarter it fell below the employment rate in 2019, by about 0.6 percentage points. For the other three regions, we only observe a temporary drop in the second quarter and generally a similar trend in the quarters of 2020 compared to quarters of 2019.

---

[59] Similar trends are observed for men and therefore the gender gap in employment did not worsen in 2020.

With respect to rural settlements, we see a comparable development over the quarters in 2020 as compared to 2019, the only difference is the first quarter when the employment rate in 2020 was 1.9 percentage points above the employment rate of 2019. The employment in urban areas followed a dominating trend in the economy caused by lockdown, it dropped in the second quarter and it was 0.8 percentage points lower than in 2019. While in the last two quarters it increased, and ended up 0.8 percentage points above 2019 levels in the fourth quarter.

Figure 3.2.: Employment rate of vulnerable groups (SES region and rural)
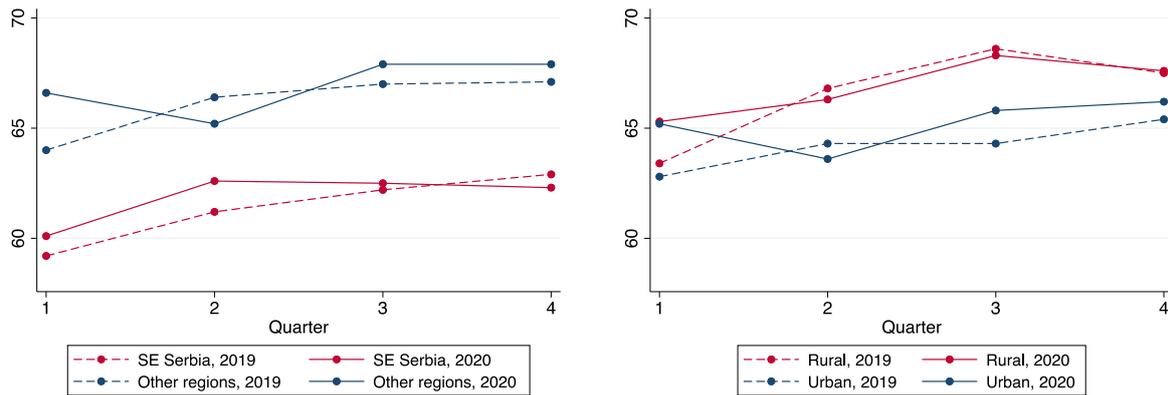
Notes: This graph shows the evolution of the employment rate of vulnerable groups (SES region and rural) and their by quarter for the years 2019 and 2020. Source: Own calculations based on the LFS data.

3.2. A difference-in-differences estimate of the impact of the pandemic on vulnerable groups and sectors

3.2.1. Methodology

To analyse the changes in the labour market outcomes we use the difference-in-differences methodology and we compare outcomes before (2019) and after (2020) the effects of epidemic occurred for the groups that we identified as potentially vulnerable. Compared to the previous, descriptive analysis this methodology allows us to control for the effect of other relevant variables when analysing employment trends in two years. We do the analysis for each vulnerable group and quarter separately.

We estimate the following regression:

$$y_{itd} = \beta_0 + \beta_{DiD}(I(vuln.\,group)_{itd} * Y2020_t) + \beta_1 vuln.\,group_{itd} + \beta_2 Y2020_t + X_{itd}\delta + \gamma_d + \varepsilon_{itd}$$

$$i = 1, ..., n; \; t{=}2019, \, 2020 \;\; (1)$$

where y_{itd} is the outcome (employment, absenteeism and actual hours worked) of individual i in year t in district d.[60] We consider the standard outcome employment and the other two

---

[60] Districts represent third level of territory units used for statistical analysis according to Nomenclature of territorial units for statistics (NUTS), i.e. NUTS3 level territory units.

outcomes are indicators which were found to be especially relevant labour market indicators during the pandemic. Instead of firing workers due to a lower economic activity, there were other intermediary options available to firms such as furloughing or reducing the actual hours worked. An additional reason why hours worked could be affected by the pandemics is the increased burden of homework and childcare that fell on the household.

The variable $I(vuln.group)$ takes the value 1 if the individual belongs to the specific vulnerable group, and 0 if not. $Y2020_t$ is a dummy variable taking the value 1 for year 2020 and the value 0 for the year 2019. The interaction of $I(vuln.group)_{itd}$ and $Y2020_t$ is the difference-in-differences estimator which captures the impact of belonging to a vulnerable group in a given quarter in the year 2020, i.e. the effect of the pandemic on the relative position of the vulnerable group, compared to its non-vulnerable counterpart (e.g. the change of female employment rate between the years, when compared to the change in employment rate for men).

The vector X_{itd} contains the following individual level characteristics, which serve as controls in our model: female, 5-year age groups, highest level of education attained, living in a rural area and presence of children aged 0 to 14 in the household. For the outcomes absenteeism and number of hours worked, we also control for the following job characteristics: sector of activity (according to NACE classification) and employment status.[61] All regressions include district level fixed effects expressed by the term γ_d.[62]

The difference-in-differences estimation relies on the parallel trends assumption. This assumption requires that the pre-trends of the two groups (e.g. youth versus others, female versus males, etc.) were parallel before the treatment occurred. In our case, we consider treatment to be the pandemic and the treatment year is 2020.[63]

---

[61] For employment status we use a categorical variable with the following five categories: (1) employee with permanent contracts, (2) employee with temporary contract, (3) self-employed, (4) self-employed farmer and (5) unpaid family member.

[62] The variable *low education* holds the same information as the variable highest educational level attained (3 categories: primary school/low education, secondary school and college/university). As a result, these two variables are collinear and only one can be included in the regression. In order to be consistent among specifications, when estimating the regression for the impact of COVID-19 on low educated, instead of the variable *low education* we use in the regressions the categorical variable highest educational level attained (this has among others the category low education) as in all other regressions. The variable of interest is the interaction between the vulnerable group, in this case low education, and year 2020 variable and this interaction is included in the regression. Similarly, (1) we do not include the variable young when estimating the gap between young and not young, because the variables capturing age categories contain the information on age: we include age categories instead; (2) we do not include the indicator SES region when estimating regional differences because the regional differences are captured by the district fixed effects: we include district level fixed effects instead. In all cases the interaction between the vulnerable group and the year dummy is included.

[63] To ensure that our results are robust and not driven by trends, we perform the so-called placebo tests where we assume the placebo treatment year to be 2019 and the pretreatment year to be 2018. Results of the placebo tests are available upon request.

3.2.2. Results

This section presents the results of the difference-in-differences estimations for the outcomes employment, absenteeism and actual hours worked for the identified vulnerable groups.[64] The estimates in the Figures 3.3 to 3.5 express whether the outcome, e.g. the employment for the vulnerable group, e.g. the youth changed in 2020 with respect to 2019 for a given quarter compared to the group of older workers. For instance, a positive estimate would imply that, in a given quarter, the employment rate of the vulnerable group increased compared to the rest of the population, while a negative estimate would mean that the employment rate of the vulnerable group decreased. In other words, given that vulnerable groups typically have lower employment rates, the positive (negative) sign of the estimates indicates a widening (narrowing) of the employment gap between the vulnerable group and their counterparts.

Figure 3.3 shows the impact estimates for employment of vulnerable groups. Compared to those aged 30-64 which had no decrease in employment, we see that **the youth had a reduction in the employment rate by 3 percentage points only in the second quarter**. Furthermore, **for the low educated we find a significant employment reduction in Q3 and Q4 by 2.4 and 3.0 percentage points respectively (middle left subfigure)** compared to the higher educated individuals, for whom the employment had slightly increased in this quarters. We further find **a significant reduction of 2.1 percentage points in employment in quarter 3 for the SES region in 2020** (middle right subfigure) **compared to other regions** in which the employment in this quarter had slightly increased. In the third quarter the employment rate increased in the other regions, while in the SES regions it stagnated and therefore the estimated impact is negative. For females (upper right subfigure) and urban population (bottom left subfigure) we do not observe any changes in employment in any quarter.

Overall the results indicate that, **those with low education have suffered a further, permanent reduction in their employment likelihood after the first year of the pandemic**. The gap in employment between those with low and higher levels of education was already substantial before the pandemic (see Figure 3.1) and it has even increased further during the pandemic in the second part of the year. On the other hand, **for the youth and those from the SES region we find a temporary reduction in their employment likelihood in second and third quarter of 2020 respectively**. The gaps in employment chances between these two groups and their non-vulnerable counterparts have temporary increased in second and third quarter of 2020 respectively, while in the last quarter of 2020 those differences are insignificant, suggesting that this effect was only transitory.

---

[64] The corresponding tables are Tables A.1, A.2 and A.3 in the Appendix 1.

Figure 3.3: Impact estimates: Relative changes in employment of vulnerable groups
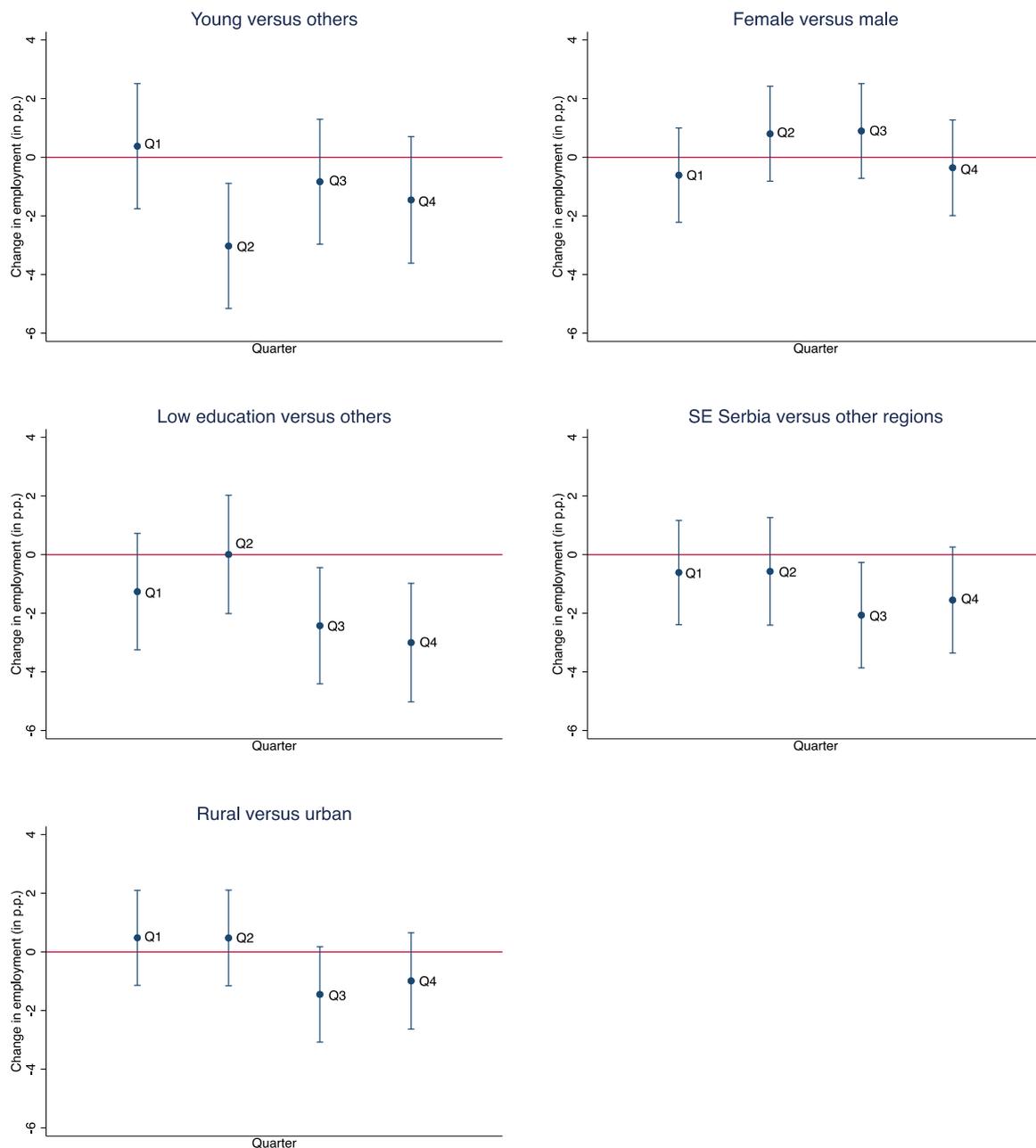
Notes: This graph shows the difference in impact estimates for employment of vulnerable groups and their non-vulnerable counterparts, for each quarter. The points in the graph present the estimates, while the lines present 90% confidence intervals. An impact estimate is statistically significant if the confidence interval falls completely below or above the red horizontal line (x=0). A positive (negative) coefficient means that the employment rate of the vulnerable group increased (decreased) compared to their non-vulnerable counterparts. We use the probit model in regressions and the reported estimates are marginal effects. Controls in regressions: female, rural, dummy for child aged 0 to 14 in household, 5-year age categories, education fixed effects and district fixed effects.

We turn now to the effect of the pandemics on absenteeism. Full estimation results (presented in the Appendix 1) suggest that, compared to 2019, the share of workers who were absent from work in 2020 was higher in the first and second quarter (by about 2.5 and 6 percentage

points), lower in the third quarter (by about 2.5 percentage points), while the difference between the years in fourth quarter was not significant. The analysis in chapter 2 suggests that the increased absenteeism in the first two quarters was mainly due to lower business activities, while the decrease in the third quarter was due to reduction of holiday days. The latter appeared to be an attempt to make up some of the lost time and income.

The changes in absenteeism of vulnerable groups are presented in Figure 3.4. The results indicate that, unlike those aged 30 to 64, **young aged 20 to 29 had a significant reduction in absenteeism in the fourth quarter** (upper left subfigure). One interpretation of this result is that the **young people work more frequently in sectors (such as AFSA) which tried to make up the lower working hours from the first half of the year in the fourth quarter** in addition to already higher absenteeism in the third quarter, which was present for all workers.

With regards to gender differences, a significant effect is found only in the second quarter. **Given that the overall absenteeism in Q2 has increased by 6.2 p.p.[65] the negative effect of 1.3 p.p. indicates that this increase was lower for females than for males** (top right panel). Given that women are more likely to perform housework than men, this result suggests that gender differences in job characteristics, rather than increased household chores during the pandemic were behind the differences in absenteeism in the work place. This is in line with the findings from Section 2 which suggest that the main reason for increased absenteeism in Q2 2020 is lower business activity. There were no differences in terms of absenteeism with regards to the education (middle left panel).

We turn now to the geographical differences in absenteeism. **Unlike the workers from other regions**, **workers from SES region were less likely to be absent from work in the fourth quarter** (middle right panel). One possible explanation could be that sectors dominating in the SES region tried to make up in the fourth quarter for the lower activity in the first half of the year.

Overall, workers from rural areas faced a higher absenteeism increase than workers in urban areas, resulting from different trends in the first and the third quarter. **In the first quarter, there was an overall increase in absenteeism compared to the previous year, but this increase was higher in rural than in urban areas** (by about 2 percentage points). In addition to the effects of COVID-19 on increased absenteeism which were observed for all workers, higher increase for rural workers in Q1 could be due to differences in weather conditions between the years. **In the third quarter, in which we find an overall drop in absenteeism**, compared to 2019**, the drop was lower for rural than for the urban population,** and therefore the coefficient is positive. This indicates that decreasing holidays days – the mechanism that was used in the third quarter ᵗᵒ make up for some lost time and income – was used less frequently in rural areas, although they were more likely to be absent from work in the first quarter. This can partially be due to seasonality of agricultural works which dominate the jobs in rural areas[66] as the activity in these jobs can probably be less compensated in this manner.

---

[65] See table A.2 in the Appendix 1.

[66] Approximately 28% of the rural population works in the agricultural sector, while additionally about 6% is employed in sector T (Activities of households as employers; undifferentiated goods and services producing activities of households for own use), while other activities in Manufacturing sector which makes up about 20% of rural employment are likely to be more connected with agriculture than in urban areas.

Figure 3.4: Impact estimates: Absenteeism of vulnerable groups
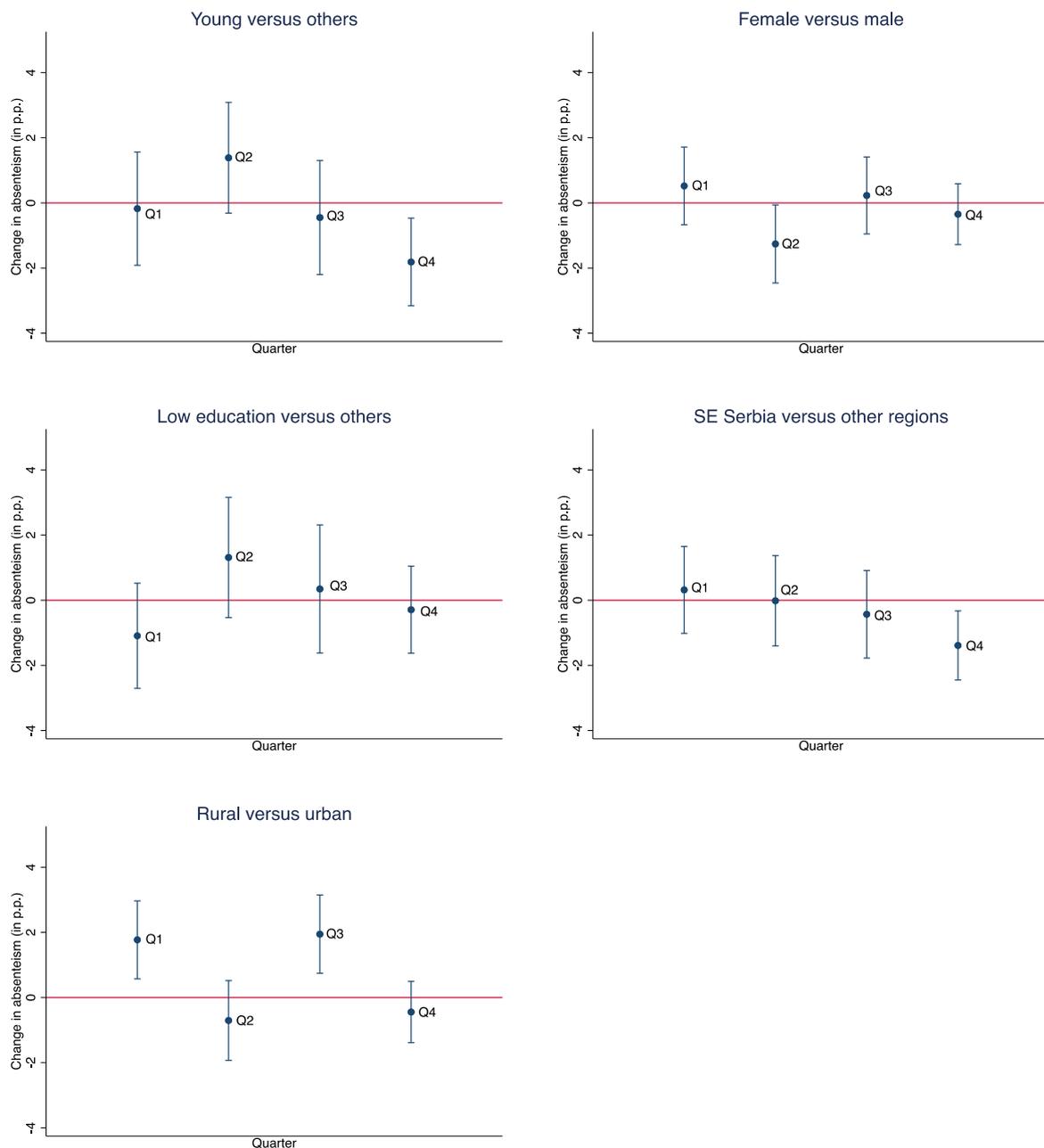
Notes: This graph shows the impact estimates for absenteeism of vulnerable groups for each quarter. The points in the graph present the estimates while the lines present 90% confidence intervals. An impact estimate is statistically significant if the confidence interval falls completely below or above the red horizontal line (x=0). A positive (negative) coefficient means that the absenteeism rate of the vulnerable group increased (decreased) compared to the rest of the population. We use the probit model in regressions and the reported estimates are marginal effects. Controls in regressions: female, rural, dummy for child aged 0 to 14 in household, sector of the job, employment status, 5-year age categories, education fixed effects and district fixed effects.

The impact estimates graphs for changes in actual hours worked are shown in Figure 3.5. Note that we include absent workers in this analysis, and we do this in order to estimate the impact of absenteeism on the reduction of the overall hours worked. Our analysis shows that quarterly changes in actual hours worked are to an important degree driven by changes in

absenteeism.[67] Put differently, the decision on hours worked was more frequently whether the employees would work or not, and not how many hours they would work. The actual hours worked follow a pattern similar to absenteeism but notice that the two outcomes go in opposing directions: an increase in absenteeism causes a reduction in hours worked.

Compared to the population 30 to 64, **youth (top left subfigure) had a significantly higher reduction of 1.3 hours in the second quarter**. While the working hours were reduced for all workers, this reduction was higher for younger workers. Although much of this difference can be contributed to the higher absenteeism of young workers (see figure 3.4) although this increase was not significant. We also observe that **unlike for those aged 30-64 who worked shorter hours in fourth quarter, for those aged 20-29 working hours increased by about 0.5 hours**, largely due to already described trends in absenteeism. We do not observe any gender differences in working hours changes be the years (top right subfigure).

The actual hours worked fell for both more and less educated workers in Q2 (see appendix 1, Table A.3), **but the reduction was more pronounced for the more educated workers by about 1.2 hours** as evidenced in Figure 3.5. As this difference depending on levels of education was not observed for absenteeism, we conjecture that it is driven by individuals who actually worked, and among them less educated workers had a lower decrease in working hours. For other quarters we do not observe any differences in working hours depending on the level of education.

While working hours in Q3 have increased for all workers this increase was higher in the SES region, by about 1 hour. This difference is driven predominantly by increased hours of those actually working, as absenteeism differences were not pronounced. On the other hand, **the working hours in Q4 were lower than in 2019 in all regions except in SES region.** This effect is due to two reasons. Firstly, workers from this region were less likely to be absent in the fourth quarter of 2020 than in the previous year (unlike the workers from other regions), and this has increased their working hours. On the other hand, regardless of the region we observe an increase in working hours of those who went to work. Therefore the absence of change for workers in other regions is due to compensating effect of increased absenteeism and increased working hours of those who went to work.

The changes in working hours for rural and urban population show similar patterns as the ones for absenteeism (Figure 3.4). **In the first quarter both urban and rural population reduced their hours, but the reduction among rural population was more pronounced**. This difference stems from absenteeism which increased for all workers, but this increase was higher in rural areas. **In the second quarter, both groups reduced the hours, but in this case, the rural population less than the urban population** (3.4 hours vs. 2 hours). Given that the differences in absenteeism were not significant, but were positive, this effect can partially be contributed also to lower decrease of working hours of those who stayed at work in rural areas. **While urban population in Q3 worked more than the previous year**, **the rural population working hours remained the same**. This effect was mainly driven by the

---

[67] We estimated the impacts on actual hours worked without individuals who were absent from work, but these impact estimates were insignificant suggesting that differences in changes in actual hours worked are predominantly driven by absentees.

absenteeism trends described above. Finally, no differences between rural and urban population are observed for the fourth quarter.

Figure 3.5: Impact estimates: Actual hours worked of vulnerable groups
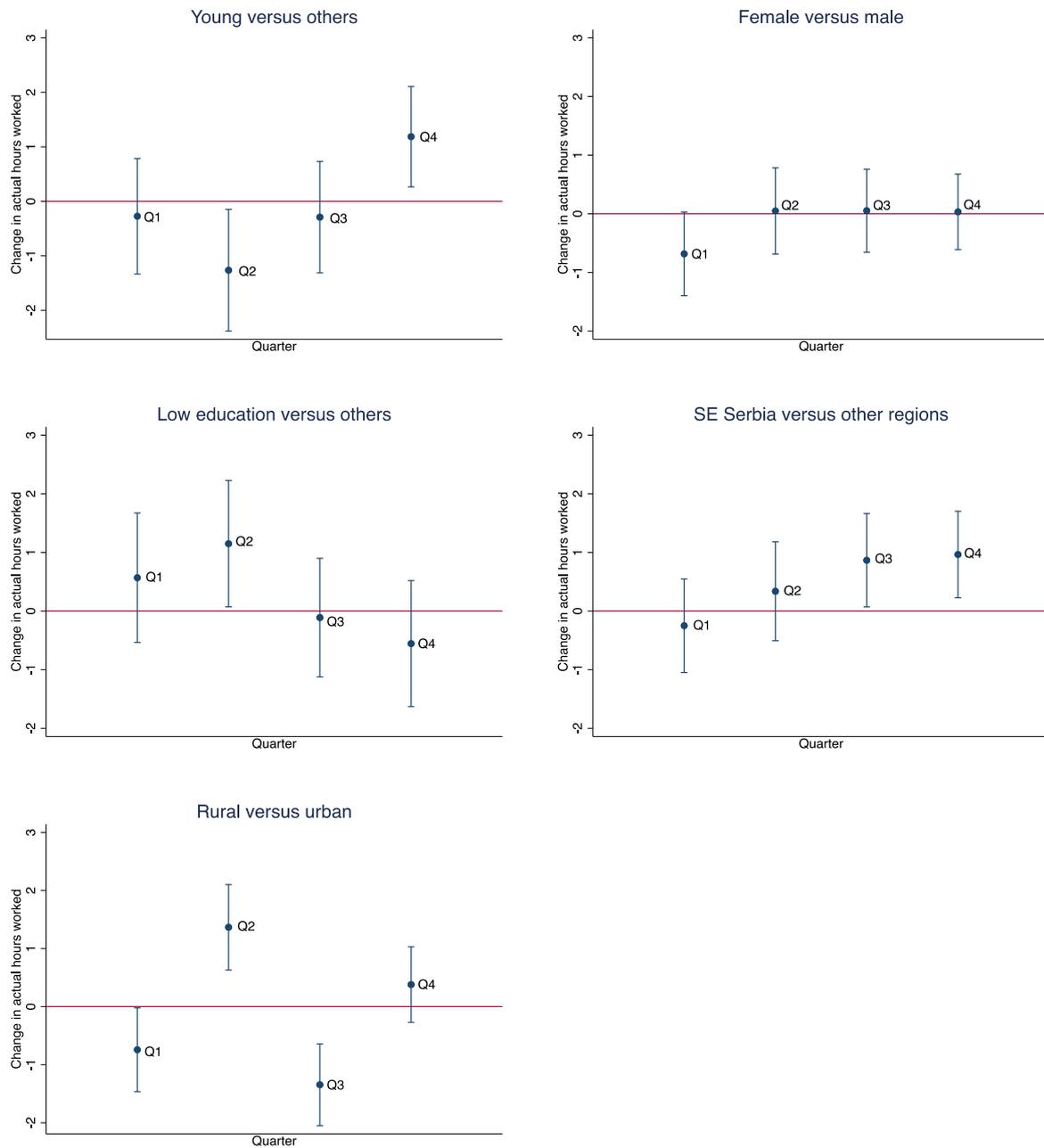
Notes: This graph shows the impact estimates for actual hours worked of vulnerable groups for each quarter. The points in the graph present the estimates while the lines present 90% confidence intervals. An impact estimate is statistically significant if the confidence interval falls completely below or above the red horizontal line (x=0). A positive (negative) coefficient means that the actual hours worked of the vulnerable group increased (decreased) compared to the rest of the population. We use the ordinary least squares model in regressions. Controls in regressions: female, rural, dummy for child aged 0 to 14 in household, sector of the job, employment status, 5-year age categories, education fixed effects and district fixed effects.

The impact estimates in this section of the report have shown a very different pattern for the vulnerable groups highlighting the importance of a separate analysis for these groups. These

differences are driven by the different characteristics of these groups such as differences in job characteristics, educational background, geographical location, etc. Here we summarize these effects by vulnerable groups:

- **Youth (aged 20-29)**. In addition to already unfavourable trends in the second quarter, youth were exposed to additionally adverse effects reflected by both lower employment and lower working hours (the latter stemming from both higher absenteeism and lower working hours of those who went to work). However by the end of the year, the situation improved for them, and the labour market gaps between them and those aged 30-64 returned to the 2019 levels.

- **Women**. Surprisingly, we do not find any gender disparities in the negative impacts of COVID-19 pandemic and this is different from the findings in other countries (see for instance Collins et. al, 2020). This is especially surprising because the needs for homework and childcare have increased during the pandemic (see chapter 4).

- **Low educated**. The low educated population have suffered a further, permanent reduction in their employment likelihood in the last two quarters of 2020, which has increased the employment gaps between them and persons with higher education. Higher vulnerability of their jobs can be due to lower costs of their dismissal, the fact that they typically work in vulnerable jobs and sectors, and lower opportunities to find new work during COVID-19 pandemic.

- **SES region**. Unlike the rest of the workforce, SES region experienced a temporary decrease in employment in the third quarter, which temporarily increased employment gap between them and other regions. Those who remained employed also worked longer hours in the last two quarters, and this increase was higher than in other regions.

- **Rural population.** While we do not find any differences between rural and urban population in the terms of employment changes, some interesting differences occur in the terms of working hours. In the first quarter, both urban and rural workers reduced their hours with respect to 2019, but the reduction among rural population was more pronounced, due to their higher absenteeism. Both groups also reduced hours in the second quarter, but in this case, the decrease was lower for rural workers, due to both lower absenteeism and actual working hours. Finally, while urban population in Q3 worked more than the previous year, the rural population working hours remained the same, mainly due to lower absenteeism of urban population than in the previous year. This lower absenteeism was due to an attempt to make up for some lost hours worked in first two quarters of 2020. Differences in rural and urban settlements could be explained by differences in lockdown effects, seasonality of the works among the rural population, as it is dominated by agriculture sector, and possibly differences in the two years in terms of the weather.

4. Analysis of the new survey data economic effects of COVID-19 pandemic

While the LFS and NES data will provide detailed, nationally representative data on the labor market status, they are not particularly designed to analyze COVID-19 effects, and they cannot capture all the relevant information. To that end, a new nationally representative survey of the population aged between 20 and 64 years was conducted[68] which focuses on the effects of the pandemic on COVID-19. In this chapter we present most important results from this survey which complement the analysis presented in the previous chapters.

Sample for the survey is based on the stratified random sampling and the urban and other areas within each region were identified as the main sampling strata. Random sampling was performed in a two-step procedure. In the first step, households were randomly selected within each predefined stratum. In the second step, a member of the household aged 20 to 64 was randomly selected from the pool of persons of that age group in the household. Sample weights are used to correct for the overrepresentation and underrepresentation of surveyed groups. The survey is based on the questionnaire that was designed for the purpose of this study. The questionnaire defines the collected data on socio-demographic characteristics of the household, labour market status and employment prior to lockdown of respondent, job search and employment during the pandemic (including health measures at work and homework), health and access to health services, financial situation of the household, measures implemented by the government and division of household chores.[69]

Sample description

Table 4.1 provides a description of the sample and the labour market status of respondents before the COVID-19 pandemic. The sample includes 3,044 individuals. Males and females are equally represented in the sample and the average age of the respondent is 42.8 years. About half of the respondents are married, while 16.3% of persons live in households which have children 6 years or younger, 25% which have children aged 7 to 17 years and 18.6% which have household members older than 65. Most respondents (60.6%) reported secondary education as their highest educational attainment. More than half of the population lives in urban settings and the four regions are roughly equally represented.

With regards to labour market status, approximately half of the respondents said that they were working for salary for a company or governmental institution – 52.6%, while additionally 5.6% worked as a self-employed, 4.2% had an occasional or seasonal job, while about 1.4% were working as contributing family members. In total, 63.8% of the sample were employed in 2019. On the other hand, 19.3% of the respondents were unemployed and looking for work, 6.5% were students/pupils and 6.7% were pensioners. The remaining

---

[68] The survey INEQ-RS-COVID-19 was conducted via phone interview, by independent market research agency Ninamedia from Novi Sad, from July until October 2021.

[69] The questionnaire is available in the Appendix 2. Given that this report relies on other data sources, we do not present the analysis of all the data collected within this questionnaire, but focus on the parts of the data which complement the best the previous chapters of this report. After the end of the project INEQ-RS-COVID-19, the data will be fully available to other researchers interested to analyze them in more detail.

respondents represent other groups of inactive: permanently disabled, performing housework and other inactive respondents.

Table 4.1: Socio-demographic characteristics and labour market status before COVID-19 pandemic

	Respondents N=3,044
Socio-demographic characteristics	
Female	50.1%
Age	42.8 (±12.7)
Married	55.0%
Household with child aged 0 to 6	16.3%
Household with child aged 7 to 17	25.0%
Has household member 65 or older	18.6%
Highest educational level	
Primary school or less	12.3%
Secondary school (VET or general)	60.6%
College or university	27.1%
Urban	61.0%
Region	
Vojvodina	27.2%
Beograd	23.7%
Western Serbia with Šumadija	27.9%
Eastern and Southern Srbija	21.1%
Labour market status before lockdown	
Working for wage/salary for someone, an enterprise, company or government	52.6%
Working on own account or enterprise belonging to the household	5.6%
Doing a seasonal or occasional job	4.2%
Unpaid work in a business or farm owned by a household (Contributing family member)	1.4%
Unemployed (looking for work)	19.3%
Student/pupil	6.5%
Pensioner	6.8%
Permanently disabled	0.4%
Person who performs housework	2.2%
Other inactive person	1.0%

Notes: This table reports socio-demographic characteristics and labour market status of respondents before COVID-19. Data are presented as mean (±SD) for continuous measures, and % for categorical measures.

Table 4.2 provides the job characteristics of employed persons in detail. We consider a person to be employed if he/she reported that he/she was employed for at least one month in the period March 2020 until May 2021 (in total at most 15 months)**.** The majority of respondents worked as an employee in the private sector (62.1%), 8.8% are self-employed, while the remaining 29.1% work in the public sector. In most cases (44%) there are less than 10 people at the main workplace of the respondent. A significant number of respondents works at work places with 50 or more employees (30.6%) and a quarter (25.3%) worked at a workplace with 10 to 49 employees. With regards to the contract type, 61.3% of respondents

had a permanent formal contract, while the rest had less secure contracts - 24.5% had a formal, but temporary contract, and 14.2% had no contract.

Table 4.2: Job characteristics of employed

	Respondents N=2,141
Ownership company	
Private sector	62.1%
Private sector: self-employed	8.8%
Government	29.1%
Number of employees at main work place	
Less than 10	44.0%
Between 10 and 49	25.3%
50 or more	30.6%
Contract type	
Permanent formal contract	61.3%
Temporary formal contract	24.5%
No contract	14.2%

Note: This table provides job characteristics of individuals who were employed at least one month during the COVID-19 pandemic (period March 2020 to May 2021). Data are presented as mean (±SD) for continuous measures, and % for categorical measures.

4.1. Employment and job search during COVID-19 pandemic

In order to understand better the employment trends during the COVID-19 pandemic we create 5 groups based on their status before the pandemic. We do this to show how the labour market experience during COVID-19 differed depending on the pre-pandemics labour market status. We define the following 5 groups (1) those working for wage/salary or self-employed, (2) seasonal or occasional job or unpaid work in family business, (3) unemployed, (4) students, (5) those performing housework or other inactive.

Results in Table 4.3 show the average months persons have worked during the pandemic. Individuals who were wage- or self-employed before the pandemic were employed on average 14.2 out of 15 months, while seasonal or occasional workers (including contributing family wokers) worked about 10.6 months. Additionally, those who were not engaged in the labour market before the pandemic – unemployed, students or inactive, have been working for about 2.4 months within the period. **Therefore, while those who had stable employment, i.e. wage or own-account workers, have been out of work for about one month on average, there was some inflow into employment by groups which have not been employed before the pandemic – unemployed, students and inactive.** Additionally, the results suggest that 13.3% of households reported that at least one member of their household, which did not work before the pandemic has found a job. These two results taken together suggest significant transition between the labour market statuses during pandemic.

Table 4.3: Number of months employed

	Respondents N= 2,786	
Employment status before pandemics	Months employed during pandemics	Share
Working for wage/salary or self-employed	14.2	62.7%
Season or occasional job, unpaid work in family business	10.6	5.97%
Total out of work before pandemic	2.4	31.3%
Unemployed	2.4	20.8%
Students	2.8	7.0%
Performs housework or inactive	1.2	3.5%

Notes: This table reports the number of months in employment (with maximum being 15 months, between March 2020 and May 2021). Data are presented as mean (±SD) for continuous measures, and % for categorical measures.

In table 4.4 we report the results based on the questions related to job search. The section on job search was asked to individuals who did not have a job before COVID-19 pandemic (except pensioners and permanently disabled) and to those who do not hold the same job as before the pandemic. Among those respondents, less than half searched for a job. Our results further indicate that **the unemployed experienced considerable difficulties when searching for jobs, as among those who were searching, 54.6% applied for jobs that they usually would not apply for and about one third of them (31%) could not perform seasonal jobs that they usually would do.**

Table 4.4: Job search by labour market status before pandemic

	N=1,256	N=303	N=70	N=585	N=198	N=99
	Total	Wage /self-empl.	Seasonal/ Occas.	Unempl.	Students	House-work/ inactive
Searched for job during pandemic	44.1%	58.2%	44.1%	47.5%	32.3%	4.8%
Applied for job(s) that he/she usually does not apply for (if searching)	54.5%	60.6%	87.8%	50.2%	38.5%	85.7 %*
Could not perform a seasonal/occasional job (if searching)	31.0%	27.1%	58.4%	34.2%	28.3%	10.7 % *

Notes: This table reports answers to job search questions. This section was asked to individuals who did not have a job before COVID-19 pandemic (except pensioners and permanently disabled) and to those who do not hold the same job as before the pandemic. Group (1): Working for wage / salary or self-employed, group (2) Seasonal or occasional job, unpaid work in family business, group (3) Unemployed, group (4) Students and group (5) Performs housework or inactive. * less than 20 responses.

Besides studying how the search of the overall population changed, we examine the job search behaviour by employment status before the pandemic. We observe that the most active group in terms of job search were individuals who worked for salary or were self-employed before the pandemic. Interestingly, one third of students also searched for the job. The results by group further suggest that **more than half of all groups, apart from students, applied**

for jobs that they usually would not apply for. On the other hand, seasonal/occasional workers and unemployed were the ones who most often reported that they could not perform a seasonal/occasional job they were able to work on during the pandemic.

4.2. Changes in the working conditions

Table 4.5 presents changes in the working conditions of individuals who were employed during COVID-19 pandemic. We first investigate if more workers had to take additional work during the pandemic and the nature of that work. Results indicate that while most employed individuals performed one job during the COVID-19 pandemic, about a quarter (24.8%) performed more than one job. Within this group, about half of them (49.7%) performed more jobs than they would have in case there was no pandemic. **In other words, for about 12.4% of the employed the number of jobs held during COVID-19 pandemic was higher than it would have been if the pandemic had not occurred.** For some of these workers, taking additional job was probably a **way to overcome the difficulties in the labour market in terms of job security or income**.

Table 4.5: Employment outcomes during COVID-19 pandemic

	Respondents N=2,141
Performed more than one job during COVID-19	24.8%
More jobs than usual (if more than one job)	49.7%
Held same job throughout	82.2%
Experienced changes in work conditions during COVID-19 (if same job throughout)	78.0%
Changes at main job during COVID-19 (if same job throughout)*	
Reduced working hours	34.9%
Used holidays in the period of lower economic activity	23.1%
Increased working hours	19.4%
Increased wage/salary	19.3%
Reduced wage/salary	17.6%
Been away from work due to lower economic activity, but I was still paid for	17.0%
Temporary business closure	9.5%
I had a temporary unpaid leave	7.1%
Performed different job within the same company	7.1%

Notes: This table shows the employment characteristics of respondents who were at least one month employed in the period March 2020 to May 2021. Data are presented as mean (±SD) for continuous measures, and % for categorical measures. *Multiple responses possible.

Among the workers who were employed before the pandemic, the share of individuals who held the same job during COVID-19 stood at 82.2%. **Among the workers who stayed in the same job, 78.0% of respondents reported that they faced at least one change in working conditions**, since the onset of the pandemic. **About one third of workers (34.9%) experienced reduced working hours, while 19.4% experienced increased working hours.** Interestingly, about 16% of workers who had reduced also report increased working hours, indicating that some work time that was lost at one part of the pandemic was compensated

during other period of work.[70] Workers also frequently reported **reduced wage/salary (17.6%)** and an **increase in the wage/salary (19.3%)**. Unlike the working hours, workers typically recorded only a reduction or an increase in wage.[71]

Table 4.5 also suggests that many workers were absent from work during pandemic. Most frequent reasons for absence were **using holidays in periods of lower economic activity (in 23.1% of the cases) and being away from work due to lower economic activity but being regularly paid (17.0%). Less frequently workers were forced to take temporary unpaid leave (7.2%)**. Other changes that respondents reported less frequently include: (1) temporary business closure (9.5%), and performing different job within the same company (7.1%).

We can further explore the job characteristics of individuals whose job outcomes were adversely affected by the pandemic. We focus on the following three outcomes which capture different negative aspects on the labour market: (1) Job (in)security: Experienced more job changes during the pandemic than usually; (2) Temporary wage cut and (3) Temporary unpaid leave. We explore how informal workers and temporary workers performed in terms of these 3 outcomes and we analyse the outcomes by sector. Informal workers were more likely to experience 2 out of the 3 adverse outcomes compared to formal workers.[72] Similarly, temporary workers were more likely than permanent workers to experience each of the three adverse outcomes on the labour market.[73] Therefore, **our findings suggest that informal workers were more likely than formal workers to experience adverse employment changes during the pandemic, while within formal employment the same is true for temporary when compared to permanent workers.**

We turn now to sectoral differences, and we study the differential sectoral impact for temporary wage cuts and temporary unpaid leave (Figures 4.1 and 4.2).[74] In all sectors 17.6% of employees experienced a temporary wage cut and in Figure 4.1 we report sectors in which this change occurred most frequently. **Wage reductions were most frequent in Accommodation and food service (36.9%)**, but there are also other affected sectors, such as **Professional activities[75] (27.8%), Arts, entertainment and recreation (24.7%), Administrative activities[76] (, 24.3%), Manufacturing (22.5%) and Wholesale and retail trade (21.6%).**

---

[70] Among all respondents, 577 reported that they experienced reduced hours, and out of these 94 said they experienced as well increased working hours. In total 310 individuals worked more hours, and out these again 94 had as well periods with fewer work hours.

[71] There are few individuals who experienced both, and overall it can be said that one experienced either a lower wage or a higher wage.

[72] We regress each outcome on being informally employed. Surprisingly, informal workers were less likely to have more job changes than usual.

[73] Similar to informal workers, we regress each outcome on the likelihood of being a temporary worker.

[74] We do not examine workers who changed more than one job by sector due to low number of observations.

[75] Sector M according to NACE classification.

[76] Sector N according to NACE classification.

Figure 4.1: Temporary wage cuts in selected sectors
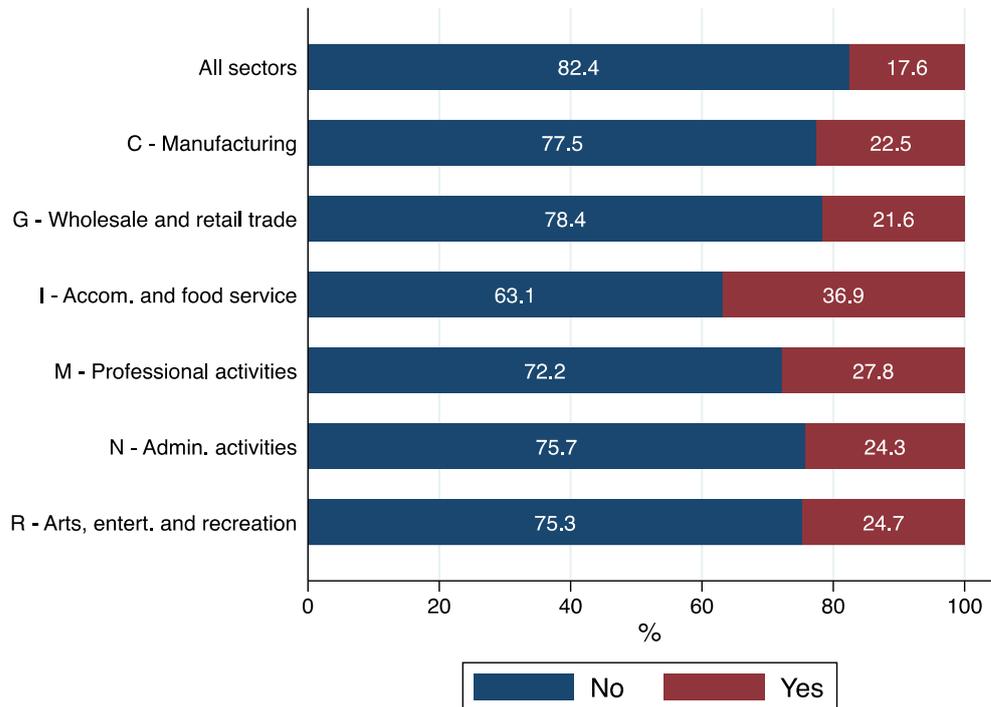
Notes: The figure shows the share of workers by sector which reported to have had a wage cut. We report only sectors with a share of employees of at least 20%.

Figure 4.2: Temporary unpaid leave in selected sectors
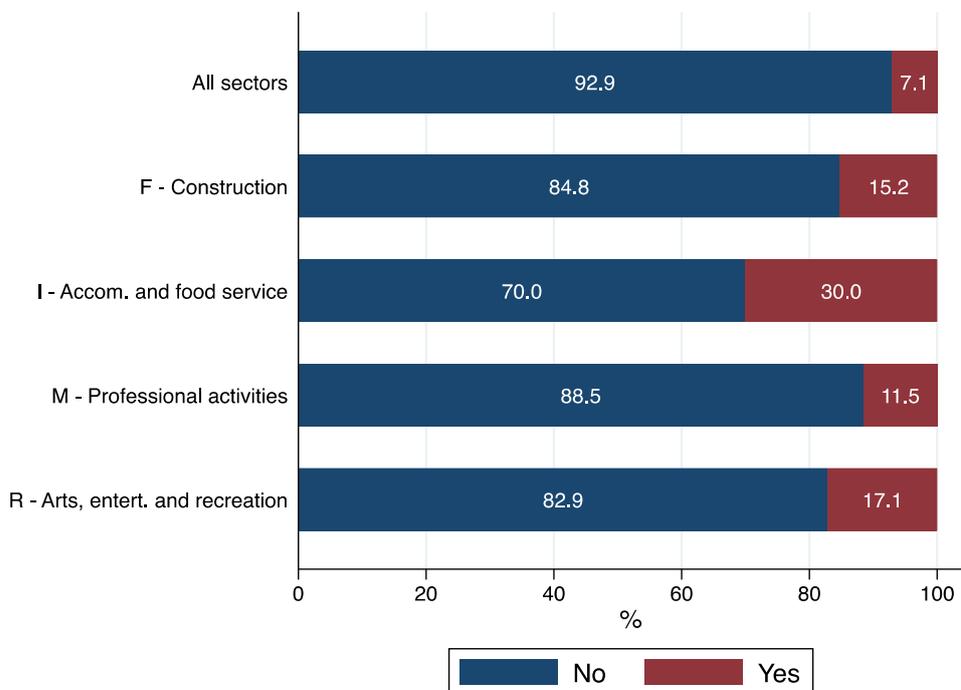
Notes: The figure shows the share of workers by sector which reported to have had a temporary unpaid leave. We report only sectors with a share of employees of at least 10%.

50

For **temporary unpaid leave**, we find that overall there were 7.1% of employees who were on temporary leave during the pandemic (Figure 4.2). Again, the **most affected sector was Accommodation and food services (30.0%)**, but there were a few other affected sectors, **Arts, entertainment and recreation (17.1%), Construction (15.2%) and Professional activities (11.5%)**. Overall, according to the two indicators we use the sector Accommodation and food services was most affected, but two other sectors stand out in terms of vulnerability of employees: Professional activities and Arts, entertainment and recreation.

Figure 4.3 investigates the size of the changes in the average earnings by employment status before the pandemic. The results indicate that **while the earnings in wage employment on average have remained constant, the wages in self-employment have been reduced by about 10 % on average**. Occasional workers saw a slight increase in their wages, by about 2%, however they on average work less than first two groups of workers.

Figure 4.3: Wages before and during the pandemic by employment status
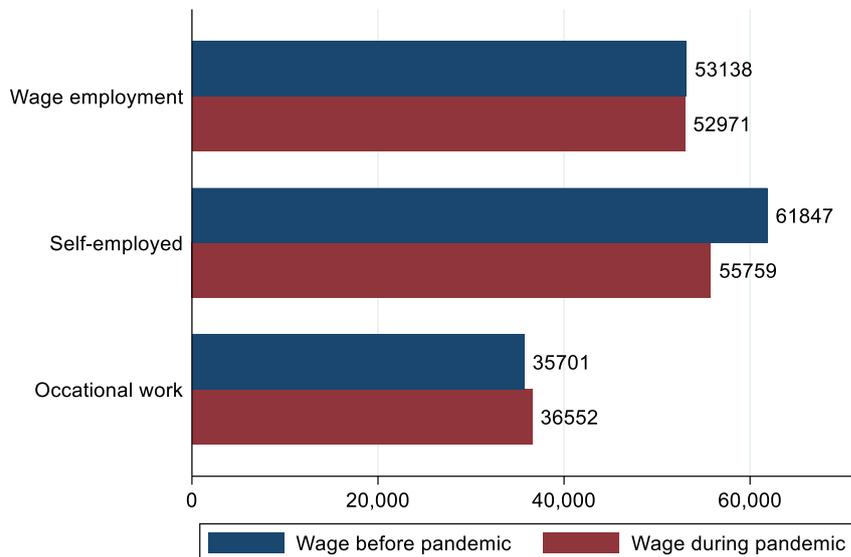
Notes: The figure shows the average earnings by employment status before the pandemic. Workers who report only wages before or during the pandemic are excluded from the analysis, as well as the workers who report interval wages. In order to reduce the effects of outliers, the sample also excludes bottom and top 1% of the wage distribution. Total sample includes 1,427 workers, out of which 1,278 wage employed, 83 self-employed and 66 occasional workers.

Relatively large sample for the analysis of wage-employed has also allowed us to differentiate the wage changes depending on the workers' place in wage distribution. Figure 4.4 analyses wage changes in 5 wage quintiles. The results indicate that **within the wage employment the wages in the bottom quintile have increased by about 4.7%, while the wages in the top quintile have decreased, by about 5.2%**. In other quintiles wage changes are much lower (about 1% or less) and insignificant. The increase of the low wages is likely due to the increase in the minimum wage by about 10% when compared to 2019.

Figure 4.4: Wages before and during pandemic in wage-employment by quintiles
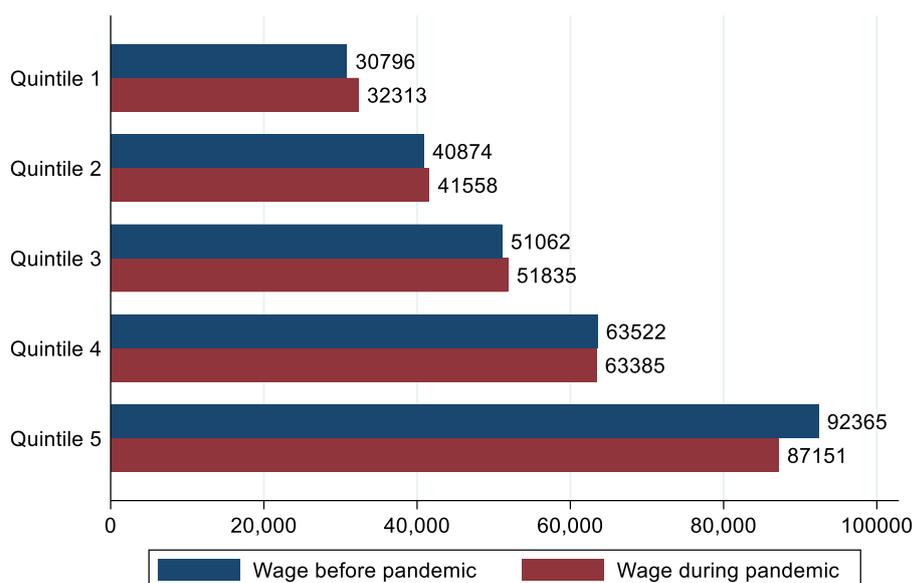
Notes: The figure shows the average wages by their position in the wage distribution before the pandemic (i.e. wage quintiles). Workers who report only wages before or during the pandemic are excluded from the analysis, as well as the workers who report interval wages. In order to reduce the effects of outliers, the sample also excludes bottom and top 1% of the wage distribution. Total sample includes 1,278 wage employed, divided into approximately equal groups.

We also used regression analysis to estimate the earnings changes that vulnerable groups faced during the pandemic. As suggested in Chapter 3 these groups include youth, women, low-educated, persons from the South-East Serbia region and persons from rural areas. The results suggest that **youth has faced the decrease in their wages of about 2% on average, the low-educated had an increase in their wages of about 3%**, while other groups had no significant changes. The increase of wages in the low educated group of workers is in line with the increase of the minimum wage between the years.

4.3. Work from home, productivity, and sick leave during COVID-19 pandemic

In table 4.6, we show the responses to work from home questions. Approximately **one third of respondents said that they could partially or fully work from home**. Among these, a large majority was offered to work from home during the pandemic (85.6%). The share of employees who worked from home was thus 28.7% in Serbia which is less than the EU average of 47.9% reported in July 2020.[77]

Before the pandemic started, working from home was relatively infrequent. Most of those who can work from home worked from home less than 25% of their time (80.9%), while the share of workers who worked from home 50% of their working hours or more was

---

[77] According to a Eurofund report (2020), in July 2020, 33.7% of all employed persons in the EU reported to work exclusively from home, while another 14.2% reported to work both from home and at employers' premises.

less than 15%. However, once the pandemic started the frequency of working from home increased significantly, and approximately half of the employees worked from home 50% or more of their time. Therefore, **among employees who can work from home, there was a considerable shift to remote working, as the share of those who worked 50% or more of their time from home increased by about 35 percentage points.**

For some workers, working from home could have caused additional strain in work they lacked adequate working conditions at home. **In terms of working equipment at home, respondents most frequently reported that they lacked office like space (30.3%) and adequate chair for work (26.7%)**. Other responses included No PC/laptop (12.4%), No mobile phone (12.1%) and No internet access (11.0%).

Table 4.6: Work from home during COVID-19 pandemic

	Respondents N=706
Among those who can work from home	
Offered to work from home	85.6%
Estimated share of time working from home during pandemic (if offered to work from home)	
Less than 25%	26.8%
From 25% to 49%	22.8%
From 50% to 74%	17.1%
From 75% to 100%	33.3%
Estimated share of time working from home before pandemic (if offered to work from home)	
Less than 25%	80.9%
From 25% to 49%	4.4%
From 50% to 74%	3.2%
From 75% to 100%	11.5%
Access to working from home conditions* (if offered to work from home)	
No office-like space	30.3%
No adequate chair for work	26.7%
No PC / Laptop (notebook)	12.4%
No mobile phone	12.1%
No internet access	11.0%

Notes: This table shows the responses to work from home questions. Data are presented as mean (±SD) for continuous measures, and % for categorical measures. *Multiple responses possible.

Overall, a majority of respondents said that they get done a similar amount of work as before (60.4%). Interestingly 21.9% of respondents say that they get done more, while the remaining 17.7% state that they get less done since the COVID-19 pandemic started. Therefore, while **on average there were no changes in productivity, about one fifth of the workers experienced an increase and about one fifth experienced a decrease in productivity**

Table 4.7: Productivity outcomes during COVID-19 pandemic

Productivity now compared to period before COVID-19	
I get much more done	11.1%
I get a little more done	10.8%
I get about the same done	60.4%
I get a little less done	11.8%
I get much less done	5.9%

Notes: This table shows the changes in the productivity during COVID-19 pandemic. Data are presented as mean (±SD) for continuous measures, and % for categorical measures.

Out of the workers interviewed, 21.1% said that they contracted COVID-19[78], however **every fifth employee who contracted COVID-19 did not take sick leave**. While employers were legally required to compensate workers 100% during sick leave, our data shows that only 64.5% actually did so. **This suggests that some employers did not respect workers' rights and did not provide the legally required compensation during sick leave.**

Table 4.8: Sick leave during COVID-19 pandemic

	Respondents N=816
Among those who had COVID-19 (and were employed)	
Took sick leave	80.09%
Replacement rate during COVID-19 sick leave	
100% covered	64.5%
65% covered	25.1%
Other %, please specify	7.2%
No income replacement	3.1%

Notes: This table shows the share of respondents who had COVID-19 and whether they took sick leave. Data are presented as mean (±SD) for continuous measures, and % for categorical measures.

4.4. Household income and financial situation of households

Household income, inequality and poverty trends in Serbia are monitored via Survey on Income andd Living Condiitions (SILC). However, due to methodological reasons income data in SILC refer to the previous year. Therefore income data for 2020 are collected within SILC 2021 survey, and are available only in late 2022. In this section we present findings from the INEQ-RS-COVID-19 survey, which collects the data on self-estimated overall household income before and after pandemic stemming from all income sources: earnings from paid work, self-employment, rent, pensions, benefits, subsidies, financial assistance from other households (from Serbia or abroad) and others. Given that SILC data investigate all these sources of data in much more detail to arrive to the full estimates of the household income, results presented here are not necessarily going to be in line with the official estimates of the changes in the household income or poverty trends. Additionally, the INEQ-RS-COVID-19 survey collects information on subjective comparison of the financial situation before and during the pandemic, and questions on using savings and loaning money from other sources.

---

[78] We consider that an employee contracted COVID-19 if the/she said that the disease was confirmed by a doctor or a test.

Firstly, we examine how households' income changed by comparing the per capita income before and during the pandemic. To do so, we divide the households into 5 equally sized groups based on their pre-pandemic household income per capita[79]. In Figure 4.5 we show per capita income before and after the pandemic for each of five groups. We find an increase in the bottom two quintiles: **the income increased by 26.5% in the first and by 10.2% in the second quintile**. The average per capita income did not change much in quintiles 3 and 4, **whereas it dropped by 5.0% in the top quintile**. Although the percent increase seems substantial, it should be noted that the **increases in first two quintiles in the absolute terms are only about 2,600 and 2,000 RSD per capita respectively**, which is less than one tenth of the minimum wage in 2019, and lower than the income decrease for the top quintile in the amount of about 3,000 RSD.

Figure 4.5: Income per capita before and during pandemic by quintile
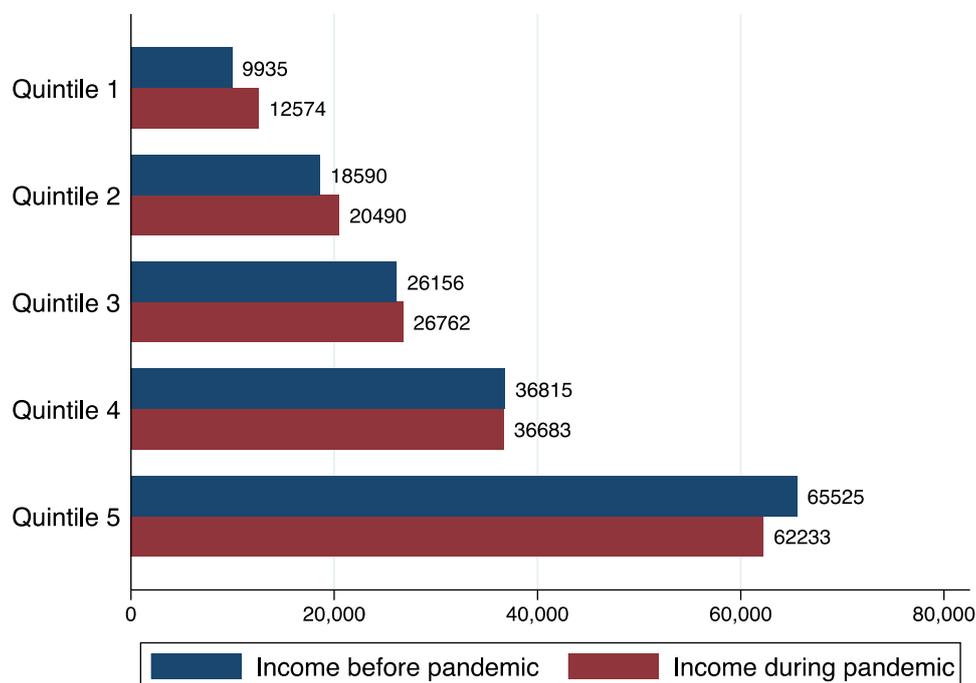
Notes: This figure shows the average per capita income by quintile. Quintile 1 are households with lowest per capita income, whereas quintile 5 are households with highest per capita income.

Other indicators of household's well-being suggest a general worsening of the financial situation. While **the share of those who cannot afford to pay an expected expense of 10,000 RSD from household budget increased slightly (from 35% to 36.2%),** we see that there were significant transitions between the groups as 7.9% could pay an expected expense of 10,000 RSD before, but cannot pay now, while the opposite is true of 6.7% of the households. On the other hand, **about 40% of the respondents say that their current financial situation is worse than before the pandemic**. In contrast with the results presented within the figure 4.5, the share is high in all the quintiles of income distribution; being the highest in the first (47.1%) and the lowest in the fifth quintile (34.8%).

---

[79] Some respondents reported only the income category and in this case we calculated the mean of the income category and used this number for the calculations.

These two results, when taken together suggest that **while on average the income in poorest households has increased**, **many of those from the first quintile actually saw worsening of their financial situation**. This result is not surprising given that the most vulnerable are heterogeneous category. This category is composed of different groups including both vulnerable workers and households which main sources of income are pensions or social transfers. Therefore, while the former have been faced with job loss or reduction of wages, the latter rely on income sources which during the COVID-19 pandemic were not reduced, and in fact they have additionally been supported by the government.

On the other hand, **every fifth household (22% of them) had to borrow money to manage financial problems**. This share was the highest in the first quintile where approximately one third of household borrowed money, while in the top two quintiles this share was about 13 percent. To meet short-term income shocks, households borrowed money predominantly from family and friends in the country (68.3%). Other sources they relied on are banks (24.1%) and family and friends outside the country (13.6%).

Table 4.9: Financial situation of the household during the pandemic

	Respondents N=3,044
Could pay unexpected expense of 10,000RSD from household budget	
Could pay before and can pay now	57.2%
Could not pay before and can pay now	6.7%
Could pay before and cannot pay now	7.9%
Could not pay before and cannot pay now	28.3%
Current financial situation worse than before COVID-19	39.9%
Household took loan to manage financial situation	22.0%
Lending sources	
Family/friends in the country	68.3%
Bank	24.1%
Family/friends outside the country	13.6%
Other sources	2.2%

Notes: This table reports responses on the financial situation of the household during the pandemic.

4.5. Household chores

Table 4.10 shows in detail responses on the additional household chores during the pandemic. We explore this subject because teleworking increased during the pandemic, which could in turn increase the household chores of these employees as they were spending more time at home. Additionally, schools were closed or operated only partially during some periods and this created an additional burden on the parents as they had to help children with their school work.

Every fifth respondent says that his/her household chores increased during the pandemic. We expected a higher number, but since only 33% of employees could work from home and 36% of households have children aged 7 to 17,[80] the share of people whose

---

[80] Note that preschools were closed only for a short period at the beginning of the pandemic.

household chores increased is in line with these other numbers. Respondents reported that the following tasks increased: **time spent on house cleaning (15.9%)**, followed by **meals preparation (9.0%), caring for children (5.4%) and helping children with school work (4.1%)**. **Women were more likely to report for each of the tasks that it increased.** While 17.5% of females reported that cleaning increased this was the case for 14.2% of men. With respect to meal preparation, 10.2% of females said that it increased and this was the case for 7.8% of men. For child care and helping children with school we found that 6.7% and 5.4% of females said that it increased whereas in the case of males we have 4.2% and 2.8%.

Parents of school aged child(ren) report that the time spent on school activities per week increased by 4 hours from 12 to 16. In order to explore whether parental time spent on school activities increased, parents of school aged children were asked how much time they spent before and during the pandemic on such activities. Already before the pandemic parents reported that they spent on average 12.3 hours on school related activities per week, and the amount of time spent on these activities increased by 4 hours during the pandemic. Respondents reported that both parents increased the time spent on school activities during the pandemic, but the mothers were the ones who increased their time more. Fathers reported an increase from 4.8 hours to 6.1 hours per week, while women reported an increase from 7.7 hours to 10.7 hours per week.

Every second parent reports that he/she incurred additional costs due to home schooling. Half of the households with school aged children reported that they had additional school costs because of the pandemic. 18.9% of parents reported that they had to buy a new mobile phone, 15.3% reported that they had to pay for additional tutoring, 12.0% had to acquire a new laptop and 7.5% had to buy a new computer.

Table 4.10: Household chores

	Respondents N=3,044
Tasks at home increase during COVID-19	21.0%
Tasks that increased most* (only if tasks increased)	
Cleaning the house	15.9%
Meals preparation	9.0%
Caring for children	5.4%
Helping children with school	4.1%
Hours spent per week on school related activities before (both parents)**	12.3 (±14.3)
Hours spent per week on school related activities now (both parents)**	16.4 (±16.7)
Household incurred schooling additional costs**	47.4%
Additional school costs incurred*	
New mobile phone	18.9%
Additional private tutoring	15.3%
New laptop	12.0%
New computer	7.5%

Notes: This table reports answers about the household chores during the pandemic. Data are presented as mean (±SD) for continuous measures, and % for categorical measures. *Multiple responses possible.** Sample includes only persons who have school aged children. Total number of respondents: 701.

5. Summary and discussion of results, conclusions and policy recommendations

Within this report we have analysed the effects of the COVID-19 pandemic on the labour market, inequality and poverty in Serbia and identified the groups that were hit the most during the crisis. The results presented in the previous chapters stem from different data sources, such as Labour Force Survey (LFS) and National employment service (NES) data and data from a new nationally representative survey on the effects of COVID-19 designed particularly to analyse the changes in labour market outcomes (INEQ-RS-COVID-19 survey), and household financial situation before (2019) and after (2020) the effects of pandemic occurred.

This chapter firstly summarizes and discuess the results presented in the Chapters 2, 3 and 4 of the report which separately analyse (1) main changes in the labour market and (vulnerable) job characteristics, (2) employment outcomes of the vulnerable groups and (3) results from the INEQ-RS-COVID-19 survey. These parts of the analysis have been presented separately as they rely on different methodologies and focus on different aspects of the labour market vulnerablities during COVID-19 crisis. We summarize the results by different labour market outcomes which have been studied in all the chapters, and additionally focus on household's income changes during the pandemic which have been investgated via INEQ-RS-COVID-19 survey.

In the second part of this chapter we offer some conclusions and policy implications of the analysis takin into account COVID-19 timeline, measures implemented by the Government of Serbia during pandmic and effects on the macro-level trends in the economy.

5.1. Summary and discussion of results

Employment and unemployment trends, structure of the employment

Although main labour market indicators in Serbia did not show a worsening in 2020, results suggest that COVID-19 pandemic interrupted favorable trends in employment and unemployment in Serbia from the previous years. According to LFS data employment rate in Serbia stagnated, while in the majority of other European countries it decreased (in EU-27 it decreased by 0.8 p.p). **Results also suggest that there was a temporary decrease of employment in Q2 of 2020 of 1 percentage points (p.p.) or by 2%,** which was the consequence of the state of emergency that was introduced in order to contain the pandemic**. The decrease in Q2 was both due to more dismissals and lower availability of temporary jobs when compared to the previous year. The latter finding is confirmed by NES data which suggest that in Q2 2020 there were fewer new employees from the pool of registered unemployed than in the previous year.

Although unemployment rate decreased the unemployed mainly transferred to inactivity, as the employment remained unchanged. Transition from unemployment to inactivity was predominantly happening in Q2, due to obstacles in job search during the state of the emergency. By the end of the year, unemployment rate reached the same levels as in

2019. NES data confirm this trend, as the number of registered unemployed was lower in 2020 than in the previous years.

Employment stagnation in 2020 is the result of a simultaneous increase in formal and decrease in informal employment. Increased formal employment in 2020 is the consequence of combination of the long-term employment trends from recent years, higher job security, and the government retention measures which were directed only to formal jobs. **However, some segments of formal employment, such as temporary workers and workers in Accommodation and food service sector, were permanently hit by the pandemic.** While the number of permanent workers increased by about 70,000; the number of temporary workers decrease by about 24,000 (or by about 6%). This decrease resulted from lower availability of temporary (including seasonal and occasional) jobs in 2020, and higher number of dismissals/quits from these jobs than in the previous year, while some temporary workers also found permanent positions. On the other hand, the employment of workers in Accommodation and food service sector was hit the most as their services depend on close contact with customers, and the number of employees in this sector decreased by 7,000 (or by 8%) in 2020. Finance and Transport sectors also faced a decrease in formal employment in 2020, which was of transitory nature (largely due to decrease in Q2).

Conversely, sectors such as Construction (Sector F), Trade (Sector G) and Information and Communication (Sector J) had higher number of formal workers than in the previous year, by about 15,000, while other sectors had only temporary decreases or increases in number of workers. **Although self-employed and workers in small-firm were considered to be vulnerable, data do not indicate a decrease in their numbers,** likely due to generous retention measures for MSMEs.

The decrease in the number of informal workers of about 50,000 (or by 10%) stemmed from decreases in both wage- and self-employment. The biggest decrease was recorded in Q2 – 132,000 (about 25%), while the number of informally employed continued to be lower than in 2019 even in Q4, suggesting a permanent decrease. The decrease of informally employed in 2020 was the result of the long-term trend of employment formalization, but also lower availability of informal jobs during the pandemic, rather than dismissals from informal jobs, which occurred only temporary in Q2. **Among informally employed, the biggest drop was in Agriculture which suffered a loss of 14%**, while at the same time there were no changes in formal Agriculture employment.

In general, **labour market transitions had different dynamics in 2020 when compared to the previous years**. INEQ-RS-COVID-19 survey suggests 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.** This is corroborated with the evidence from the LFS data which suggested lower transitions from unemployment/inactivity to informal and temporary jobs than in the previous year. Survey data also suggest that **among those who were searching for work about a half applied for jobs that they usually would not apply for in the absence of pandemic**. This particularly applies to seasonal/occasional workers where this share is as high as 90%. On the other hand, **about 13% of persons who have not worked before had started working during the pandemic.** Furthermore, according to LFS data, there **were more dismissals in Q2 than in the previous year**.

From the perspective of vulnerable groups, **low educated have suffered a further, permanent reduction in their employment after the first year of the pandemic**. The gap in employment between those with low and higher levels of education was already substantial before the pandemic (about 15 percentage points) and it has increased in the second part of the year (by 2.4 and 3.0 percentage points in Q3 and Q4). On the other hand, **youth employment rate was about 1 percentage point lower in 2020 compared to 2019**. More detailed analysis suggested that this decrease was **mainly due to temporary reduction in their employment in Q2** by about 3 percentage points, which caused an increase of the gap between youth and older parts of the working age population (30-64). Finally, the **employment in the region of South-Eastern Serbia (SES) also had a temporary reduction in third quarter of 2020** by about 2 percentage points. Female and employment in rural areas, although also considered to be more vulnerable, were not hit differently than male employment and employment in urban areas.

Working hours

Working hours decreased by 1 (or by 2.6%) hour per week in 2020. Almost all sectors which are predominantly privately owned have suffered the decreases in working hours. The strongest decreases were in Accommodation and food services sector (by 4.6 hours per week, or 10.6%, compared to 2019), Arts, entertainment and recreation (by 3.1 hours or 9.2%) and Construction (3 hours or 7%). By employment status, **self-employed and seasonal and occasional wage workers had the biggest losses in the working hours (by 7% and 11 %).**

The biggest decreases were in the first half of the year, in Q1 – by 1.5 hours, and particularly in Q2 – by 3 hours (i.e. by 4.0% and 7.4%). The decrease in the working hours in the first part of the year was mainly caused by the state of emergency which lasted from March 15th to May 5th (therefore including both Q1 and Q2), with lockdown measures prohibiting work of some enterprises (restaurants, bars, sports centres etc.), while for others bringing lower levels of business activity (e.g. retail). LFS data suggest that the main reason for decreasing working hours were absences from work due to low business activity, as about 270,000 workers in Q1 and Q2 2020 (compared to only 17,000 workers in 2019, i.e. increase by more than 15 times). INEQ-RS-COVID-19 data explored in more detail how these absences affected the workers position. The data suggest that **23.1% of workers had to take holidays in periods of lower economic activity, while 17.0% of workers were away from work due to lower economic activity, but were paid for their work.** At the same time, 7.2% of employees were forced to take temporary unpaid leave, while for 9.5% of them there was a temporary business closure.

Consequently, in Q3 working hours increased, as significantly fewer workers were taking holidays than in the previous year. This was due the fact that some workers have already used them in the first part of the year in the period of low economic activity. In Q3 2020 the number of workers who were on holidays was about three times lower than in Q3 2019, which is in line with above observations from INEQ-RS-COVID-19 data. Therefore, **in Q3 there was an attempt to make up for some lost time and income from the first part of the year**. In Q4, the share of absentees returned to 2019 levels, although working hours in total were slightly reduced (by 0.5 hours).

While vulnerable groups follow similar trends to the ones described for the overall population, we find also some differences. **Youth faced an additional reduction of 1.3 working hours in Q2**, driven by both absenteeism and decreasing working hours. **Additionally, they worked longer working hours in Q4**. **Workers in the SES region worked about 1 hour more in Q3 and Q4, compared to workers from other regions**. Compared to 2019, they have worked about 2 hours more in Q3 and had no change in working hours in Q4, unlike other regions which had a decrease in Q4.

Rural workers also faced different trends for working hours compared to urban workers, likely due to the **seasonality of work in rural areas**. In Q1, due to higher increase absenteeism, rural workers reduced their working hours by 2 hours, compared to urban where this decrease was lower. In Q2, both groups reduced working hours, but this reduction was lower for rural than for urban workers, although there were no differences in absenteeism. In other words, rural workers who stayed at work, unlike urban workers did not reduce their working hours. In Q3, urban population worked more than the previous year (by reducing absenteeism), while rural population working hours remained the same. **Seasonality of work which in rural areas, which is dominated by agriculture related activities prevented making up for absenteeism in first part of the year by increasing the hours in others**

INEQ-RS-COVID-19 data suggest that relatively modest decrease in working hours hides the fact that **35% of employees reported reduced working hours**, **while at the same time for 19.4% working hours have increased**. About one fifth of both groups indicated that they have faced both reduction and increase in working hours during the pandemic. Increased working hours for some workers could be in line with the survey finding that **12.4% of the employed the number of jobs held during COVID-19 pandemic was higher than it would have been if the pandemic had not occurred**. For some of these workers, taking additional job was probably a **way to overcome the difficulties in the labor market in terms of job security or income**.

Wages[81]

INEQ-RS-COVID-19 data show that for **about 15% of the workers there was a temporary interruption in the receipt of wages**. For some workers – 7.1% of total number – this meant going on temporary unpaid leave, while for 9.5% of them experienced temporary business closure (small percentage of workers experienced both). Temporary unpaid leave was most frequently experienced in Accommodation and food services (30.0%), but there were a few other affected sectors, Arts, entertainment and recreation (17.1%), Construction (15.2%) and Professional activities[82] (11.5%).

---

[81] The analysis of wage trends relies only on the data from INEQ-RS-COVID-19 survey. The LFS data could not be used as LFS registers only wages for the employees, as the wages in the LFS data were presented only as intervals, which prevents certain types of analysis we conducted and since there was a significant increase (by about 10%) in the number of workers who refused to disclose wage information. On the other hand, SILC data could not be used for these purposes as income data for 2020 are collected within SILC 2021 survey, and are going to be available only in late 2022

[82] Sector M according to NACE classification.

On the other hand about **one fifth of the workers reported having reduced wage/salary (17.7%) and an increase in the wage/salary (19.3%)**. Unlike the working hours, there was no overlap, and workers typically recorded only a reduction or an increase in wages. Wage reductions were again most frequent in Accommodation and food service (36.9%), but there are also other affected sectors, such as Professional activities (27.8%), Arts, entertainment and recreation (24.7%), Administrative activities[83] (24.3%), Manufacturing (22.5%) and Wholesale and retail trade (21.6%).

The results further indicate that **while the earnings in wage employment on average have remained constant, the wages in self-employment have been reduced by about 10 % on average**. Occasional workers saw a slight increase in their wages, by about 2%, however they on average worked less than first two groups of workers. **Within the wage employment the wages in the bottom quintile have increased by about 4.7%, while the wages in the top quintile have decreased, by about 5.2%.** In other quintiles wage changes are much lower (about 1% or less) and insignificant. Among the vulnerable groups, **youth has faced the decrease in their wages of about 2% on average, while the low-educated had an increase in their wages of about 3%.** The increase of the low wages and wages for low-educated workers was likely due to the increase in the minimum wage by about 10% when compared to 2019.

Other job characteristics: work from home, productivity and sick leave

The share of workers working from home had increased in 2020 by about 2 p.p., and majority of these workers simply transitioned from never working at home to working from home frequently. Increased work from home was particularly pronounced in Q2 2020, and in Information and communication, Education and Financial sector. While in other sectors workers majorly returned to regular work, these three sectors continued to have high shares of workers working from home even in Q4 2020. Working from home was more frequent in formal employment, and particularly among public sector workers.

INEQ-RS-COVID-19 data suggest that while one third of respondents can partially or fully work from home, before the pandemic the share of workers who worked from home half or more of their working hours was less than 15%. During the pandemic, **there was a considerable shift in the intensity of remote working, as the share of those who worked half or more of their time from home increased by about 35 percentage points**. For some workers, working from home caused additional strain in work as they lacked adequate working conditions at home. **In terms of working equipment at home, respondents most frequently lacked office like space (30.3%) and adequate chair for work (26.7%)**.

Overall there were no changes in self-assessed productivity during the pandemic. However, about one fifth of the workers experienced an increase and about one fifth experienced a decrease in their productivity. The decrease in productivity could have occurred due to higher time spent in working from home, where many parents may have found that they needed to assist their children in school activities or spend more time doing household choirs. Every fifth respondent says that his/her household chores increased during

---

[83] Sector N according to NACE classification.

the pandemic, while parents of school aged child(ren) report that the time spent on school activities increased from 12 to 16 hours per week.

Finally, while employers were recommended by the government to compensate workers 100% during sick leave if they have contracted COVID-19. However, our data shows that only 64.5% of the employees actually received full replacement rate, while 25% of them received a mandated pre-pandemic 65% coverage. **This suggests that some employers did not respect workers' rights and did not provide the recommended compensation during sick leave**.

Household income and financial situation

Household income, inequality and poverty trends in Serbia are monitored via Survey on Income and Living Conditions (SILC). However, since income data for 2020 are collected within SILC 2021 survey, they are available only in late 2022. In this report we present the findings from INEQ-RS-COVID-19 survey based on self-estimated household income.[84] The results suggest that **while per capita income in the first and the second quintile has increased**, **it has dropped in the top quintile**. **However in absolute terms these changes were low,** as in the first two quintiles they amounted to about 2,600 and 2,000 RSD per capita respectively, while the income decrease for the top quintile was about 3,000 RSD. All changes are below one-tenth of the minimum wage, which in 2020 was about 30,000 RSD.

Other indicators of the household well-being suggest that **while on average income in poorest households had slightly increased, many of those from the first quintile actually saw worsening of their financial situation**. On average about 40% of the households say that their financial situation is worse than before the pandemic, this share is the highest in the first (47.1%) and the lowest in the fifth quintile (34.8%). Although this result seems contradictory to the income increase observed in the first quintile, it is not surprising given that the most vulnerable are heterogeneous category. **This group is composed of different groups including both vulnerable worker households and jobless households**, for whom the main sources of income are pensions or social transfers. Therefore, **while the former could have faced job loss or reduction of wages, the latter rely on income sources which during the COVID-19 pandemic were not reduced**.

On the expenditure side, workers that switched to remote working have had unexpected expenditures when adopting their home to work. At the same time, every second parent reports that he/she incurred additional costs due to home schooling.

---

[84] INEQ-RS-COVID-19 survey estimate of the household income is based on one question which is asked in the same manner for the situation before and during pandemic. Given that SILC data investigates different income sources in in much more detail and uses more complex information to arrive to the full estimates of the household income, results presented here are not necessarily going to be in line with the official estimates of the changes in the household income or poverty trends.

5.2. Discussion, conclusions and policy implications

As a response to the outbreak of the COVID-19 pandemic, the Government of Serbia declared the state of emergency on March 15, 2020. The state of emergency included a number of virus containment measures that affected the workers, population mobility, and the economic activity in general. After the state of emergency ended – on May 6, containment measures were gradually withdrawn, however, there was a new surge of COVID-19 cases in June/July and October to December and containment measures were introduced, albeit milder than during the state of emergency, once again putting limitations on business activities.

Workers who were particularly vulnerable during this period were informally and temporarily employed, for whom their (lack of) contract meant they were more likely to be dismissed; as well as those working in small enterprises and self-employed, because these enterprises are due to lower liquidity more susceptible to cessation of work in turbulent times. Additionally, "non-essential" sectors which assume direct close contact between service providers and consumers (tourism, trade, transport, etc.) or where large numbers of workers work together in a small workplace (manufacturing, administrative services, etc) were under a greater risk as their businesses were temporarily suspended and/or suffered reduced working hours.

As a response to the pandemic the government adopted generous support measures towards firms with near universal character, which undoubtedly provided a lifeline for some business who were under the greatest risk. Beside tax deferrals, main employment retention measures were direct subsidies applied across the entire private sector to the micro, small and medium enterprises (MSMEs) and large enterprises.[85] The subsidy was applied across the entire private sector, excluding the financial sector, and enterprises that have cut their employment by more than 10% since the onset of the pandemic. Subsidy for MSMEs included payments of the minimum wage for each employee in first three months (May to July), which was later reduced to 60% of the minimum wage (August/September). On the other hand, large enterprises were eligible to receive 50 percent of the minimum wage for each employee who was on the furlough, for at least 15 days within the month. Anecdotally, this measure was used much less frequently than the one for MSMEs. Most important income support measure was universal cash transfer to adult population in the amount of 100€.

Compared to other economies the GDP drop in Serbia in 2020 was relatively low – only 1%, however, with diverging trends within the year. While in the Q1 GDP grew by 5.2% – continuing a long-term trend in recent years, in Q2 it dropped sharply – by 6.2%, mainly due to containment measures implemented during the state of emergency. In Q3 and Q4, GDP drop stabilized at about 1 percent decrease (year-on-year), indicating a gradual stabilization of economic trends. Trends were diverging across economic activities with the biggest losses in Arts, entertainment and recreation, Professional and support service activities, Trade, Transport and Accommodation and food services.[86] On the other hand, some sectors, such as Information and communication, Agriculture, and Finance and insurance recorded a growth.

---

[85] See more details in Chapter 1.
[86] Within these sectors some subsectors were more probably more hit, however SORS provides disaggregation of the overall changes in the economic activity based on 10 large groups, with some NACE sectors grouped

The decrease in the economic activities has been transmitted to the labour market activity without any lag – with stronger effects in terms of working hours, i.e. at intensive margin, than in terms of employment. Compared to 2019, employment rate in 2020 remained unchanged, while working hours decreased by about 1 hour on average (or by 2.6%). The fact that the majority of the effects took place at the intensive margin can at least partially be explained by the design of employment retention subsidy, as an important condition for eligibility was that the enterprises must not reduce the number of their employees by more than 10%. However, this measure could not prevent the loss in the working hours occurred partially due to containment measures and partially due to lower business activity.

The intensity of containment measures directed the impact on the labour market in different quarters. As for the economic activity most of negative effects on the labour market happened in Q2 during the state of emergency. Employment rate decreased temporarily in Q2 by about 1 p.p. (or by 2%), while working hours decreased by 2.9 hours (or 7.4%). Working hours also decreased in Q1 by 1.5 (or by 4.0%), again likely due to state of emergency which started on March 15th. Decrease of working hours in Q1 and Q2 was, mainly due to low economic activity, and 23% of workers (un)willingly took holiday days in this period as they could not perform their jobs during this period, while others – to a much lower extent – were forced to go on unpaid leave. In Q3, when restrictions were low working hours actually increased (by 1 hour, or 2.6%), due to lower use of holiday days. This has put an **extra burden on some workers, who were contained in their homes during the state of emergency, and could not take their usual holidays to rest in the summer months.** Holidays, which are typically used in this quarter, could not be used again, and instead Q3 was used to make up for some lost time and income. Finally, in Q4, when the COVID-19 cases reached their maximum and limitations on working hours of some establishments were introduced, working hours decreased again and this time due to decrease of actual working hours of those who went to work.

Vulnerable workers

However, the described main trends in the labour market activity actually hide a more dynamic picture, as some workers, industries and groups were hit more by the effects of the pandemic, while others have actually increased their activity. Table 5.1 summarizes the effects that the pandemic had on vulnerable workers and vulnerable groups.

Although annual employment was unchanged, the number of informal and formal temporary workers decreased in 2020, by about 10% and 6%. Informal employment decrease was the strongest in Q2 – by 26%, while for temporary workers the decrease was the strongest in Q2 and Q3 – by 11%. For both groups the decrease seems to be permanent, as it persisted even in Q4. The analysis suggests that while some of these workers found permanent positions and some of them were dismissed, **the main reason for this decrease was low availability of informal and temporary jobs in 2020**. Employers, who were facing lower economic activity and/or the uncertainty of the conditions, have not created additional demand for work, which is usually absorbed by these workers. **Their employment is largely of transitory nature, and pandemic has put a significant hurdle in their usual labour**

market dynamics. This hurdle caused them to search for jobs they would not usually do if there were no pandemic and/or perform more jobs as a way to provide for income stability.

Table 5.1. Summary of the changes in the labour market in the first year of pandemic

Outcome	Overall	Vulnerable workers	Vulnerable groups
Employment rate	YoY: no change Q1: +2.5% Q2: - 2% Q3: no change Q4: no change	Vulnerable jobs • *Informal (-10%)* • *Formal temporary (-6%)* Formal - sectors • *AFSA (-8%)* • *Finance (-3%)* • *Transport (-2%)* Informal - sectors • *Agriculture (14%)*	Employment gap increases • *Low educated vs. others* by 2.4 (Q3) and 3 p.p. (Q4) • *Youth vs. others* by 3 p.p. (Q2) • *SES region vs. others* by 2 p.p. (Q3)
Working hours	YoY: - 2.6% Q1: - 4.0%; Q2: - 7.4% Q3: + 2.6%; Q4: - 1.5%	Vulnerable jobs • *Self-employed (-7%)* • *Seasonal and occasional workers (-11%)* Sectors • *AFSA (-10%)* • *AER (-9%)* • *Construction (-7%)* • *Transport (-5%)* • *Profess. services (-5%)* • *Admin. services (-4%)* • *Other services (-4%)*	*Working hours trends* • *Youth vs. others* additional reduction of 1.3 hours in Q2; increasing working hours in Q4 • *SES region vs. others* Worked about 1 hour more in Q3 and Q4 • *Rural vs. urban* Shorter hours in rural areas in Q1 and Q3 (by 1 hour), longer in Q2 (by 1 hour)

Abbreviations YoY – year on year effect, AFSA – Accommodation and food service activities; *AER Arts, entertainment and recreation, SES – South East Serbia*

On the other hand, the **biggest decrease in the working hours was among self-employed and seasonal and occasional workers**, **by 7 and 11% respectively**. While retention subsidies for MSMEs provided a safety for the jobs in formal self-employment, the pandemic decreased the time they can spend on the job. **This decrease in the working hours of self-employed is likely the reason they also faced a decrease in their earnings** which we estimated at about 10%. Beside them, among workers in dependant employment those in the top quintile of the wage distribution also faced a decrease in wages, by about 5%.

The consequences of pandemic were considerably different across the sectors. Accommodation and food services activities (AFSA) sector suffered the biggest decline in the economic activity – in terms of both employment and working hours – as well as in earnings. This sector was under the highest impact as it requires close contact with

costumers, and cannot be performed from home or replaced with online purchases, while additionally, travel restrictions created lower demand for their services. **The number of formally employment in AFSA sector was in 2020 lower by 8% than in 2019**, with the biggest decrease in Q3 – of 16%, likely due to seasonality of their work and the fact that initial retention subsidies were based on the number of workers in March, April and May. On the other hand, **working hours in AFSA sector were reduced by 10%,** with the biggest decrease in Q2 – by 25%. Additionally, about one third of workers in AFSA sector faced unpaid leave and wage reductions, which is the highest of all sectors.

Finance a significant temporary decrease in formal employment in Q2 by 25%, likely due to the fact that they were not included in the employment retention subsidy and that much of the personal finances that were needed in this quarter could have been done online. However, Finance sector finished the year with only a 3% decrease, no significant changes in working hours, while the sector as whole recorded an increase in gross added value. **Transport** also faced decreases in formal employment (2%). On the other hand, **most informal jobs were lost in the Agriculture sector**. While the number of formal jobs in agriculture remained unchanged, informal jobs in this sector shrunk by about 14%.

After AFSA, Arts, entertainment and recreation and Construction sectors faced as the strongest decreases in the working hours of 9% and 7%, the decrease being again the highest in Q2. and above average decrease in working hours (5%). **Above average decrease in working hours is also found in Transport, Professional, Administrative and Other service**s. Workers in the sectors which faced high decreasing working hours also had above average reporting of wage reductions.

On the other hand, Trade and Information and Communication had mainly positive consequences. They had higher number of formal workers in 2020 than in 2019 (together with Construction), and at the same time no changes in working hours.

Vulnerable groups

Even before the pandemics, vulnerable groups such as youth, women, low-educated, persons from SES region and rural areas had higher likelihood working in at least one of the vulnerable jobs such as informal and temporary employment or in Accommodation and food services. Given that these jobs and sectors were hit the most, the pandemic negatively impacted the position of vulnerable groups and increased their gaps in employment and/or working hours. We investigated the independent contribution of belonging to each of these groups on the likelihood of employment and changes in the working hours.

Results indicate that one of the consequences of COVID-19 pandemic was **the increase in the inequalities of employment opportunities of low-educated, youth and persons from SES region**. These groups had significantly lower employment rates than their non-vulnerable counterparts even before the pandemic, and this gap has increased after the first year of pandemic. **This effect was most pronounced for low-educated, as they faced decreased employment in both Q3 and Q4, suggesting more durable and permanent effects. On the other hand, youth faced lower employment only in Q2, and SES region**

only in Q3. While some of these gap increases could be temporary, they have still impacted their income security and could have a permanent negative impact on their employability.

Young workers also had higher decrease in working hours in Q2 and also had **an increase in working hours in Q4**. The increase in Q4, which was contrary to decrease for other workers, could be an attempt to make up for higher lost time in Q2 for those who remain in the same job, or evidence of new jobs that provided more stable work time. **Youth are also the only vulnerable group that have had a lower wages in 2020, by about 2%**, suggesting they were more likely to accept low-paid jobs than other groups, given that minimum wage had not changed. **In addition to a temporary reduction of employment in Q3, workers in SES region had longer working hours in this quarter. They also worked longer working hours in Q4 than other regions.** Increasing hours of those who remained at work in Q3 and Q4 could be an attempt to make up for the income losses of workers who were out of employment in Q3. **Rural workers faced different working hours trends than urban workers likely due to seasonality of work in rural areas**. We do not find any evidence of gender disparities in impacts of COVID-19 pandemic and this is different from the findings in other countries.

Work from home, working conditions and financial situation of the households

Work from home increased both in number of workers and share of time spent working remotely. The share of workers working from home had increased in 2020 by about 2 p.p , while the share of those who worked half or more of their time from home increased by about 35 percentage points. We find no evidence that increased work from home had a negative impact on the productivity; however**, this has caused additional strain as workers frequently lacked adequate working conditions such as office like space (30.3%) and adequate chair for work (26.7%). Further strain on the position of workers was caused by the fact that some employers did not provide full compensation during sick leave**, with only 64.5% of the employees who went on the sick leave due to COVID-19 actually receiving full replacement rate, which was recommended by the government.

Limited data that we had at our disposal (which did not include detailed analysis of income sources) suggest that while **on average the position of vulnerable households did not deteriorate**, **many of those from the first quintile saw worsening of their financial situation**. This group is composed of different groups including both vulnerable workers and jobless households. Since vulnerable workers were hit significantly during the pandemic, their income is likely lower. On the other hand, for jobless households the main income source are social transfers (pensions, benefits etc.) which have not decreased during the pandemic. Therefore, although more likely to be poor than vulnerable workers before the pandemic, haven't faced decreases in their incomes. Some research[87] suggested that the pandemic is likely to produce "new poor", as **many of vulnerable workers who were out of work** (or had lower number of months of employment) **during the pandemic** cannot rely on the income from the vulnerable employment. However, additional research that would analyse different income sources in more detail is needed to confirm this has happened in Serbia.

---

[87] Perugini, C., & Vladisavljević, M. (2021). Social stability challenged by Covid-19: Pandemics, inequality and policy responses. *Journal of Policy Modeling*, *43*(1), 146-160.

Increasing average incomes for those with lower incomes are in line with some of the measures implemented by the government. Firstly the increase of the average income in the first and second quintile is in line with 10% increase of the minimum wage, which occurred at the beginning of 2020. Secondly, pensioners and social benefit recipients received one-off transfer in the amount of 4,000 RSD, while the assistance was also provided to 14,000 most vulnerable women in Serbia. Finally, universal cash transfer to adult population in the amount of 100€ has certainly had more impact on the household income in the first than on the income of the households in the upper parts of the wage distribution.

Policy implications

Support measures to mitigate the economic consequences of COVID-19 in Serbia were the most generous among the Western Balkans countries, as the government wanted *efficient implementation* **of fiscal measures** *without unnecessary procedures***, so that the help arrives in time to those who need it the most**.[88] Employment subsidy and tax deferrals, main pillars of the support towards business were implemented across the entire private sector, with the exception of Finance sector, with stronger assistance to MSMEs than to large companies. According to ILO estimates[89] measures in the first half of the year only produced a cost of about 5 percent of the GDP. These measures and partially responsible for a high budget deficit of 8.1 percent – higher than in EU and most countries in the region, and the surge in the public debt to 57.4 percent of GDP (by 5.4 percentage points). However, the public debt share in GDP remains bellow EU-27 average. **These measures undoubtedly had their role in preserving formal permanent employment and the stronger support towards MSMEs was justified, as they were more vulnerable from the perspective of liquidity**

However, the amount and length of the assistance to firms should have been differentiated according to the estimated risks each sector faced and initial estimates of their performances. Our analysis suggests that some sectors such as Information and communication and Trade prospered in the terms of increased employment, while others such as Accommodation and Food services faced the strongest decreases in both employment and working hours. Estimation of the risks could have included the information whether workers in sector could work from home and if their work requires direct contact with other people, as these jobs were under a greater impact. Although such data are not available for Serbia, these estimates could have been taken from comparative research for other countries such as ICP[90] for Italy or O*Net for US.[91] **Although sector-specific support was applied in the late 2020, differentiation could have been done earlier, and therefore the assistance would be better targeted.**

---

[88] https://ras.gov.rs/uploads/2020/04/program-01-web.pdf (Serbian only)

[89] https://www.ilo.org/wcmsp5/groups/public/---europe/---ro-geneva/---sro-budapest/documents/publication/wcms_754624.pdf

[90] Barbieri, T., Basso, G., Scicchitano, S. (2020). Italian Workers at Risk during the COVID-19 epidemic. Available at SSRN: https://ssrn.com/abstract=3572065

[91] Dingel, J. I., & Neiman, B. (2020). *How Many Jobs can be Done at Home? NBER Working Paper No. 26948*. https://www.nber.org/papers/w26948

On the other hand, jobs of formal temporary workers were not directly targeted with employment retention measures, and they suffered a decrease in employment. If their contract expired during the pandemic, these workers had difficulties in finding next job due to pandemic, while their income stability was seriously compromised. Similarly, the employment of informal workers was negatively affected by the pandemic, as they don't have working contracts to rely on. Employment in both groups depends on availability of temporary jobs which have not be available during the pandemic, and their incomes were hit severely by the pandemic. Income stability of these workers should have been targeted by income support measures. While it is difficult to target this group, one mechanism could be to grant financial support to all unemployed persons registered with the National employment service.

Pandemic has also increased in the inequalities of employment opportunities of low-educated, youth and in SES region. While government programmes for youth such as "My first wage"[92] and support for young people to start their own business[93] are important programmes to support their employment, for those who were hit the most – the low educated – there haven't been programs specifically designed to address their needs. Similarly applies to workers from SES region, as a least developed part of the country.

At the same time, some of the workers' rights were violated during the crisis and the government needs to ensure that they are adhered to a greater degree. Employees (un)willingly used holiday days in the period of low economic activity in Q1 and Q2 and therefore they could not use it during the summer. Therefore, workers were not able to use their holidays for rest, but rather to accommodate for the low business activity. Furthermore, according to the recommendation from the Government[94], the employers were to pay 100% of the wage to the employee who went on the sick leave due to COVID-19 infection. However, about one third of the employees did not receive full amount of compensation during sick leave. Finally, about one third of the workers who worked from home did not have adequate working conditions such as office like space and adequate chair for work, which could have cause additional health problems. In other words, the employers haven't provided working conditions for those who were working from home to a sufficient degree.

---

[92] https://mojaprvaplata.gov.rs/poslodavci (Serbian only)
[93] https://fondzarazvoj.gov.rs/lat/proizvodi/zene-mladi (Serbian only)
[94] https://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/vlada/zakljucak/2020/50/2/reg
(Serbian Only)

Literature

Alon, T., Doepke, M., Olmstead-Rumsey, J., & Tertilt, M. (2020). *The impact of COVID-19 on gender equality* (No. w26947). National Bureau of economic research.

Collins, C., Landivar, L. C., Ruppanner, L., & Scarborough, W. J. (2021). COVID-19 and the gender gap in work hours. *Gender, Work & Organization*, 28, 101-112.Cortes, G. M., & Forsythe, E. (2020). The heterogeneous labour market impacts of the COVID-19 pandemic. *Available at SSRN 3634715*.

Del Boca, D., Oggero, N., Profeta, P., & Rossi, M. (2020). Women's and men's work, housework and childcare, before and during COVID-19. *Review of Economics of the Household*, *18*(4), 1001-1017.

Eurofund (2020). Living, working and COVID-19. Accessed on 7/12/2021 at https://www.eurofound.europa.eu/sites/default/files/ef_publication/field_ef_document/ef20059en.pdf

Farré, L., Fawaz, Y., González, L., & Graves, J. (2020). How the COVID-19 lockdown affected gender inequality in paid and unpaid work in Spain.

Genda, Y., Kondo, A., & Ohta, S. (2010). Long-term effects of a recession at labour market entry in Japan and the United States. *Journal of Human resources*, *45*(1), 157-196.

Kahn, L. B. (2010). The long-term labour market consequences of graduating from college in a bad economy. *Labour economics*, *17*(2), 303-316.

Kochhar, R. (2021). The self-employed are back at work in pre-COVID-19 numbers, but their businesses have smaller payrolls. *Pew Research Centre*. https://www.pewresearch.org/fact-tank/2021/11/03/the-self-employed-are-back-at-work-in-pre-covid-19-numbers-but-their-businesses-have-smaller-payrolls/ (accessed on 11/11/2021).

Raaum, O., & Røed, K. (2006). Do business cycle conditions at the time of labour market entry affect future employment prospects?. *The review of economics and statistics*, *88*(2), 193-210.

Sahin, A., Kitao, S., Cororaton, A., & Laiu, S. (2011). Why small businesses were hit harder by the recent recession. *Current Issues in Economics and Finance*, *17*(4).

Statistical Office of the Republic of Serbia (2019a). *Regions in the Republic of Serbia.*

Statistical Office of the Republic of Serbia (2021). Statistical Yearbook of the Republic of Serbia 2021.

Verick, S. (2009). Who is hit hardest during a financial crisis? The vulnerability of young men and women to unemployment in an economic downturn.

Appendix 1.

Table A.1: Impact on employment of vulnerable groups

	Q1	Q2	Q3	Q4
Young				
Young * y2020	0.004	-0.030**	-0.008	-0.015
	[0.013]	[0.013]	[0.013]	[0.013]
y2020	0.012**	0.006	0.006	0.014**
	[0.005]	[0.005]	[0.005]	[0.005]
Dep var mean	0.460	0.480	0.485	0.498
Observations	33,418	32,571	32,229	31,768
Female				
Female * y2020	-0.006	0.008	0.009	-0.004
	[0.010]	[0.010]	[0.010]	[0.010]
y2020	0.016**	-0.003	-0.000	0.013*
	[0.007]	[0.007]	[0.007]	[0.007]
Female	-0.120***	-0.141***	-0.152***	-0.136***
	[0.007]	[0.006]	[0.007]	[0.007]
Dep var mean	0.548	0.552	0.557	0.564
Observations	33,418	32,571	32,229	31,768
Low education				
Low education * y2020	-0.013	0.000	-0.024**	-0.030**
	[0.012]	[0.012]	[0.012]	[0.012]
y2020	0.015***	0.001	0.010*	0.017***
	[0.005]	[0.006]	[0.006]	[0.006]
Dep var mean	0.483	0.522	0.535	0.508
Observations	33,418	32,571	32,229	31,768
SES region				
SES region * y2020	-0.006	-0.006	-0.021*	-0.015
	[0.011]	[0.011]	[0.011]	[0.011]
y2020	0.014**	0.003	0.010*	0.016***
	[0.006]	[0.006]	[0.006]	[0.006]
Dep var mean	0.589	0.604	0.616	0.611
Observations	33,418	32,571	32,229	31,768
Rural				
Rural * y2020	0.005	0.005	-0.014	-0.010
	[0.010]	[0.010]	[0.010]	[0.010]
y2020	0.010	-0.001	0.011*	0.016**
	[0.007]	[0.007]	[0.006]	[0.007]
Urban	0.086***	0.089***	0.089***	0.086***
	[0.007]	[0.007]	[0.007]	[0.007]
Dep var mean	0.626	0.650	0.663	0.657
Observations	33,418	32,571	32,229	31,768

Notes: All regressions are estimated with probit model. Regressions include the following set of controls female, 5 year age groups, highest level of education achieved, living in a rural area and presence of children aged 0 to14 in the household. All regression include district fixed effects. Due to multicollinearity we exclude young, low education and SES indicator in the respective regressions. Dependent variable mean refers to the mean of the vulnerable group in 2019.

Table A.2: Impact on absenteeism of vulnerable groups

	Q1	Q2	Q3	Q4
Young				
Young * y2020	-0.002	0.014	-0.004	-0.018**
	[0.011]	[0.010]	[0.011]	[0.008]
y2020	0.026***	0.054***	-0.027***	0.004
	[0.004]	[0.004]	[0.004]	[0.003]
Dep var mean	0.072	0.058	0.094	0.059
Observations	20,552	20,43	20,625	20,356
Female				
Female * y2020	0.005	-0.013*	0.002	-0.003
	[0.007]	[0.007]	[0.007]	[0.006]
y2020	0.024***	0.062***	-0.028***	0.004
	[0.005]	[0.005]	[0.005]	[0.004]
Female	0.021***	0.041***	0.037***	0.024***
	[0.005]	[0.006]	[0.005]	[0.004]
Dep var mean	0.073	0.066	0.113	0.057
Observations	20,552	20,43	20,625	20,356
Only primary school or less				
Only prim. sch. or less * y2020	-0.011	0.013	0.003	-0.003
	[0.010]	[0.011]	[0.012]	[0.008]
y2020	0.028***	0.054***	-0.027***	0.002
	[0.004]	[0.004]	[0.004]	[0.003]
Dep var mean	-0.011	0.013	0.003	-0.003
Observations	0.071	0.030	0.042	0.041
Adj. R-squared	20,552	20,43	20,625	20,356
SES region				
SES region * y2020	0.003	-0.000	-0.004	-0.014**
	[0.008]	[0.008]	[0.008]	[0.006]
y2020	0.025***	0.056***	-0.026***	0.005*
	[0.004]	[0.004]	[0.004]	[0.003]
Dep var mean	0.064	0.048	0.085	0.048
Observations	20,552	20,43	20,625	20,356
Rural				
Rural * y2020	0.018**	-0.007	0.019***	-0.004
	[0.007]	[0.007]	[0.007]	[0.006]
y2020	0.018***	0.058***	-0.034***	0.004
	[0.005]	[0.005]	[0.005]	[0.004]
Rural	0.001	-0.004	-0.011**	-0.003
	[0.006]	[0.006]	[0.005]	[0.004]
Dep var mean	0.061	0.040	0.060	0.041
Observations	20,552	20,43	20,625	20,356

Notes: All regressions are estimated with probit model. Regressions include the following set of controls female, 5 year age groups, highest level of education achieved, living in a rural area and presence of children aged 0 to14 in the household. All regression include district fixed effects. Due to multicollinearity we exclude young, low education and SES indicator in the respective regressions. Dependent variable mean refers to the mean of the vulnerable group in 2019.

Table A.3: Impact on actual hours worked of vulnerable groups

	Q1	Q2	Q3	Q4
Young				
Young * y2020	-0.273	-1.264*	-0.291	1.187**
	[0.645]	[0.678]	[0.621]	[0.560]
y2020	-1.515***	-2.639***	1.082***	-0.641***
	[0.231]	[0.236]	[0.229]	[0.210]
Dep var mean	38.438	39.501	38.831	39.517
Observations	20,552	20,43	20,625	20,356
Adj. R-squared	0.047	0.047	0.068	0.035
Female				
Female * y2020	-0.684	0.047	0.051	0.032
	[0.434]	[0.447]	[0.431]	[0.392]
y2020	-1.242***	-2.814***	1.024***	-0.508*
	[0.292]	[0.295]	[0.278]	[0.261]
Female	-2.741***	-3.782***	-4.128***	-3.509***
	[0.286]	[0.283]	[0.323]	[0.286]
Dep var mean	36.368	37.728	37.128	38.659
Observations	20,552	20,43	20,625	20,356
Adj. R-squared	0.047	0.046	0.068	0.035
Only primary school or less				
Low education * y2020	0.568	1.149*	-0.112	-0.556
	[0.671]	[0.655]	[0.615]	[0.653]
y2020	-1.638***	-2.982***	1.065***	-0.409**
	[0.228]	[0.237]	[0.229]	[0.201]
Dep var mean	35.292	40.527	41.986	40.373
Observations	20,552	20,43	20,625	20,356
Adj. R-squared	0.047	0.047	0.068	0.035
SES region				
SES region * y2020	-0.250	0.338	0.866*	0.965**
	[0.485]	[0.513]	[0.484]	[0.448]
y2020	-1.481***	-2.878***	0.820***	-0.748***
	[0.253]	[0.256]	[0.248]	[0.225]
Dep var mean	37.107	39.422	38.686	39.517
Observations	20,552	20,43	20,625	20,356
Adj. R-squared	0.047	0.046	0.068	0.035
Rural				
Rural * y2020	-0.743*	1.367***	-1.345***	0.380
	[0.438]	[0.447]	[0.428]	[0.395]
y2020	-1.204***	-3.433***	1.671***	-0.670***
	[0.271]	[0.292]	[0.283]	[0.243]
Rural	0.537*	0.691**	1.095***	1.067***
	[0.305]	[0.300]	[0.332]	[0.299]
Dep var mean	37.471	40.963	41.586	41.121
Observations	20,552	20,43	20,625	20,356
Adj. R-squared	0.047	0.047	0.068	0.035

Notes: All regressions are estimated with ordinary least squares model. Regressions include the following set of controls female, 5 year age groups, highest level of education achieved, living in a rural area and presence of children aged 0 to14 in the household. All regression include district fixed effects. Due to multicollinearity we exclude young, low education and SES indicator in the respective regressions. Dependent variable mean refers to the mean of the vulnerable group in 2019

Appendix 2.

A SOCIO-DEMOGRAPHICS, HEALTH AND FAMILY MEMBERS

A1a Sex and age of the individual for whom the questionnaire is filled out

 0 Male 1 Female

 Age (write down) _____

A1b Municipality

A2 What is your legal marital status?

1 Never married
2 Married / Living with a partner
3 Widower/widow
4 Divorced

A3a Highest educational level completed

1 No school
2 4th grade of primary school
3 5th-8th grade of primary school
4 Primary school
5 3-year secondary school
6 4-year secondary school
7 Specialization after secondary school
8 College, 1st faculty degree
9 Higher education
10 Doctoral studies

A3b. Have you ever performed any of the following activities? (select all that apply)

1. Obtained information from public authorities/services' websites (Statistical office, Ministries, Government, other government bodies)
2. Telephoning/video calls over the internet (Zoom, Skype, Viber, Whatsapp, GoogleMeet etc)
3. Installing software and applications (apps)
4. Online purchases
5. Used word processing software
6. Created presentation or document integrating text, pictures, tables or charts

A4 How many persons usually live in your household/family?

Children/Minors   [<=2 years old] _____
                                  [3-6 years old] _____
                                  [7-10 years old] _____
                                  [11-17 years old] _____

Adults [Age 18-64]
Male |___|___|
Female |___|___|

Elderly persons [Age 65 and above] _____

A6 Do you suffer from any chronic diseases (diabetes, high blood pressure/hypertension, heart disease, asthma or other chronic respiratory issue, allergies or other chronic illnesses)?

1. Yes
2. No

A9 Household income - Average monthly income before the pandemic

Thinking about everyone who was living with you in January/February 2020, what was the monthly net income of your household in January/February 2020? Please include all earnings from paid work, self-employment, rent, pensions, benefits, subsidies, financial assistance from persons who are not members of your household (from Serbia or abroad). If you are not sure, please tell us an approximate amount.

A9a.Write down _____ RSD

A9b. Categories

1. Up to 20 000 dinars
2. 20 001 – 25 000
3. 25 001 – 35 000
4. 35 001 – 45 000
5. 45 001 – 60 000
6. 60 001 – 80 000
7. 80 001 – 100 000
8. 100 001 – 125 000
9. 125 001 – 150 000
10. 150 001 – 175 000
11. 175 001 – 200 000
12. 200 001 dinars and more
13. Refuses to answer

A10 Thinking about the same period (January/February 2020), could your household afford:

1. Unexpected expense in the amount of **10,000 dinars** that would be paid from the household budget (including the use of account and credit card overdrafts)? YES NO

A11 Are you the main contributor to household income?

1. Yes
2. No

A12 Do you participate in economic decision-making (decisions on purchases etc.) for your household?

1. Yes
2. No

B - LABOUR MARKET/EMPLOYMENT STATUS PRIOR TO LOCKDOWN

Let us now talk about your labour market status in the period January/February 2020, before the pandemic and the lockdown started.

B1 Prior to the lockdown, in January and February 2020, what was your main labour market status?

1. Working for wage/salary for someone, an enterprise, company or government -> B2
2. Working on own account or enterprise belonging to the household -> B2
3. Doing a seasonal or occasional job -> B2
4. Unpaid work in a business or farm owned by a household (Contributing family member) -> B2
5. Unemployed (seeking for work) -> JS1
6. Student/pupil -> JS1
7. Pensioner -> F1
8. Permanently disabled -> F1
9. Person who performs housework -> JS1
10. Other inactive person -> JS1
11. I don't know
12. Refuse to answer

B2a What was your usual monthly take-home pay/earnings during January and February 2020? _____ RSD *if the respondent cannot estimate ask B2b, if not go to B3*

B2b Can you estimate the interval of your monthly net earnings during January and February 2020:

1. The individual was employed but did not receive their salary
2. Up to 20 000 dinars
3. 20 001 – 25 000
4. 25 001 – 30 000
5. 30 001 – 35 000
6. 35 001 – 45 000
7. 45 001 – 60 000
8. 60 001 – 80 000
9. 80 001 – 100 000
10. 100 001 – 150 000
11. 150 001 – 200 000
12. 200 001 dinars and more 10
13. Refuse to answer

B3. Do you still perform the same job (work for the same company) as in January/February 2020?

1. yes -> B4
2. no -> JS1
3. I don't know – B4
4. Refuse to answer – B4

B4. Since the pandemic started (March 2020), did you experience any of the following changes in your working conditions. *Please select all that apply:*

1. Reduced working hours
2. Increased working hours
3. Reduced wage/salary
4. Increased wage/salary
5. I had a temporary unpaid leave.
6. Used holidays in the period of lower economic activity
7. Been away from work due to lower economic activity, but I was still paid for it
8. Performed different job within the same company
9. Temporary business closure
10. Other changes, please specify _____

JS JOB SEARCH

JS1. Did you search for a job since March 2020 (during the COVID-19 pandemic)?

1. Yes -> JS2
2. No -> JS3
3. I don't know – JS2
4. Refuse to answer – JS2

JS2. Did you apply for jobs that you would have not applied for in the absence of the pandemic (for instance, jobs out of your area of education, or job you have not worked on before) ?

1. Yes
2. No

JS3. Was there a job that you performed in the past on a seasonal or occasional basis, but you were not able to perform due to COVID-19?

1. Yes
2. No

C. EMPLOYMENT DURING COVID-19 PANDEMICS

C1. 15 months passed Since the pandemic started (March 2020), During that period, how many months did you:

1. Performed a job _____ -> if =0 go to section F; else go to C2
2. Spent searching for a job _____
3. Neither performed a job or searched for one _____
4. I don't know – C2
5. Refuse to answer – C2

C2. How many different jobs did you perform since March 2020? _____

Please count all jobs that you held with or without a written contract.

C3. Is this number of changes usual for the work that you perform?

1. Yes
2. No

[*Ask only if answer to C2 is larger than 1.*]

Let us now discuss your main job since March 2020. This is the job that you held most of the time since March 2020 until today.

C4 Are you/were you employed by?

[Select only one answer.]

1. Government
2. Private company
3. Self-employed
4. Working in a family business

C5 What was/is your job/occupation?

_____ [*Note: Needs to be coded. See LFS coding.*]

C6 Which industry does this enterprise belong to?

_____ [*Note: Needs to be coded. See LFS coding.*]

C7 How many hours do/did you usually work per week on this job?

_____

C8 Approximately, how many persons work(ed) in your main work place? *{LFS modified}*

1. Less than 10
2. Between 11 and 19
3. Between 20 and 49
4. Between 50 and 99
5. Between 100 and 249
6. More than 250

C9 In your main job, are/were you employed on the basis of a written contract?

1. yes -> C10
2. no -> C11
3. I don't know – C11
4. Refuse to answer – C11

C10 What type of written contract did/do you have?

1. Permanent contract
2. Temporary contract
3. Seasonal contract
4. Contract for occasional work
5. Other, please specify _____

C11a What was your usual monthly take-home pay/earnings in this main job in the period <u>March to December 2020</u>?

_____ RSD *if the respondent cannot estimate ask C11b, if not go to section E*

C11b Can you estimate in which interval were your monthly earnings in your main job in the period <u>March to December 2020</u>:

1. The individual was employed but has not received the salary
2. Up to 20 000 dinars
3. 20 001 – 25 000
4. 25 001 – 30 000
5. 30 001 – 35 000
6. 35 001 – 45 000
7. 45 001 – 60 000
8. 60 001 – 80 000
9. 80 001 – 100 000
10. 100 001 – 150 000
11. 150 001 – 200 000
12. 200 001 dinars and more 10
13. Refuse to answer

E JOB CHARACTERISTICS, HEALTH MEASURES AT WORK AND HOMEWORK

The next set of questions is related to your main job since March 2020, i.e. the job that you performed the most since March 2020

[Ask only if C1.1>0 that is the persons performed a job for at least a month during COVID-19 pandemic.]

E1. How often does *your job* require that you be <u>exposed to diseases or infection</u>?

This can happen with workers in patient care, some laboratory work, sanitation control, etc.
1 – never;
2 – once a year or more but less than every month;
3 – every month or more but not every week;
4 – every week or more but not every day;
5 – every day

E2. How physically close to other people are you when you perform your main job?

1 – I don't work near other people (beyond 30 meters distance) (=> E4)
2 – I work with others but not closely (e.g. I have a private office / work outdoor with a small distance from others)
3 – Slightly close (e.g. shared office / working with customers)
4 – Moderately close (at arms length / working in close contact with customers)
5 – Very close (near touching or touching other people)
6 – I don't know -E3
7 – Refuse to answer – E3

E3. How many people typically work or are in your working room/space (office, shop, construction site) on this job?

1. 1 or 2
2. 2 to 5
3. 5 to 10
4. more than 10

E4. What specific measures has your employer taken at your work place to minimize the risk of coronavirus disease (COVID-19)? Select all that apply.

1. Disinfection
2. Frequent hand washing
3. Provided protective equipment (face masks)
4. Enforced wearing face masks at work when sharing room/office/close to other people
5. Enforced distancing
6. Reduced gatherings
7. Other, specify _____
8. None

E5. Since the pandemic started in March 2020, how often do you think you have had to work without adequate protection measures to avoid contagion by COVID-19?
1. Always
2. Often
3. Sometimes
4. Seldom
5. Never

E6. Since March 2020, have you gone to work with symptoms of COVID-19 (fever, cough, shortness of breath or general malaise)?

1. No, never -> E8
2. Yes, few days when I had symptoms -> E7
3. Yes, some days when I had symptoms -> E7
4. Yes, most days/every day when I had symptoms -> E7
5. I don't know – E8
6. Refuse to answer – E8

E7. Was this your employer's decision or your own?
1. Employer's decision
2. Own decision
3. Joint decision of employer and respondent

E8. Does the nature of your work allow you to work from home?

1. I can do all my work from home/online -> E9
2. I can do some part of my work from home/online -> E9
3. I can't work from home at all -> E17
4. I don't know – E9
5. Refuse to answer – E9

E9. Has this opportunity been offered to you by your employer since the pandemic started (March 2020)?

1. Yes -> E10
2. No -> E17
3. I don't know -E10
4. Refuse to answer – E10

E10. Can you estimate the share of time that you spent, on average, working at home since March 2020?

1. Less than 25%
2. From 25% to 49%
3. From 50% to 74%
4. From 75% to 100%

E11. Can you estimate the share of time that you spent, on average, working at home prior to the start of the pandemic (before March 2020)?

1. Less than 25%
2. From 25% to 49%
3. From 50% to 74%
4. From 75% to 100%

E13. Did you have access to the following working-from-home conditions at home?

Please select all that apply.
1. Office-like space
2. PC / Laptop (notebook)
3. Mobile phone
4. Adequate chair for work
5. Internet access
6. None of the above

E15. Did you have additional expenditures in adjusting to work from home?
1. Yes
2. No

E16. Were there occasions that you wanted to work from home, because of the pandemic, but your employer denied it (if you were able to perform your job in the same way as you would in your usual work place)?
1. Yes
2. No

[*Only if he held a job in Jan/Feb 2020; otherwise go to section F.*]

E18 Please think about how much work you get done per hour since March 2020. How does that compare to how much you would have got done per hour back in January/February 2020?

1. I get much more done ->section F
2. I get a little more done ->section F
3. I get about the same done ->section F
4. I get a little less done ->E19
5. I get much less done ->E19
6. I don't know – section F
7. Refuse to answer – section F

E19 What is the main reason why you are getting less done these days than you did before the coronavirus pandemic?

1. I have had to provide childcare/home schooling and/or care for others while working
2. The equipment, software and/or internet connection I use limits what I can do
3. I have had to share space and equipment
4. I have had less work to do
5. I have been interrupted by noise made by others/distractions at home
6. Need to be at the workplace to do my job
7. Lack of motivation, hard to focus or concentrate at home
8. Ill health, tiredness
9. Lack of contact and interaction with work colleagues
10. Other reasons, please specify _____

F. COVID-19 AND HEALTH

F1a) Assess the degree to which you agree with the following statements
Compared to the period before March 2020, I was:
   a) **more nervous**   1 2 3 4
   b) **more frequently in a bad mood**   1 2 3 4
   1 – strongly disagree 2 – disagree 3 – agree 4 – strongly agree

F1b) Has a doctor ever told you that you have COVID-19 or have you ever tested positive for COVID-19?

   1. Yes ->F3
   2. No ->F2
   3. I don't know -F2
   4. Refuse to answer -F2

F2. In your view, how likely is it that you have had COVID-19?

   1. Definitely had it -> F3
   2. Very likely -> F3
   3. Likely -> F3
   4. Unlikely ->F5
   5. Very unlikely ->F5
   6. Don't know/can't tell ->F5
   7. Refuse to answer – F5

F3. Did you have to take sick leave (formally) due to COVID-19?

[Only if employed during COVID-19 pandemics]

1. Yes -> F4
2. No. -> F5
3. I don't know -F5
4. Refuse to answer – F5

F4. How much of your income was covered during this sick leave? If you took sick leave more than once, please give a response about the last sick leave that you took.

[Only if employed during COVID-19 pandemics]

1. 100% covered
2. 65% covered
3. Other %, please specify _____
4. No income replacement

F5. Have you received a COVID-19 vaccine (either one or both doses)?
1. Yes
2. No

F7 Did you use privately provided health services during COVID-19 pandemics?
1. Yes, for COVID-19
2. Yes, for other non-COVID-19 related illness
3. No.

G. FINANCIAL SITUATION OF THE HOUSEHOLD SINCE MARCH 2020

G1 Did someone you rely on for financial support (e.g. parent or partner) temporarily or permanently lose his/her job due to the crisis?

1. Yes
2. No

G3 How many members of your household, which previously did not work started working since March 2020?

G4 Household income after the lockdown

Thinking about everyone who was living with you since March 2020, what was the net monthly income of your household in this period? Please include all earnings from paid work, self-employment, rent, pensions, benefits, subsidies. If you are not sure, please tell us an approximate amount.

Write down _____ RSD *if respondent cannot estimate ask* G4b*, if not go to* G5

G4b Categories

1. Up to 20 000 dinars
2. 20 001 – 25 000
3. 25 001 – 35 000
4. 35 001 – 45 000
5. 45 001 – 60 000
6. 60 001 – 80 000
7. 80 001 – 100 000
8. 100 001 – 125 000
9. 125 001 – 150 000
10. 150 001 – 175 000
11. 175 001 – 200 000
12. 200 001 dinars and more
13. Refuses to answer

G5 Thinking about the same period could your household afford:

1. Unexpected expense in the amount of **10,000 dinars** that would be paid from the household budget (including the use of account and credit card overdrafts)? YES NO

G6 Compared to the situation before the outbreak of COVID-19 do you think that your households' financial situation during the pandemic has been

1. Much better
2. Better
3. The same
4. Worse
5. Much worse

G7 Did your household use any savings to ease financial problems caused by the Corona situation?

1. Yes
2. No

G9 Did your household have to take a loan to manage its financial situation created by the Coronavirus related conditions?

1. Yes -> G10
2. No -> G11
3. I don't know -G11
4. Refuse to answer -G11

G10 From which sources have you borrowed the money? *Tick all that apply.*

1. Family / friends in the country
2. Family / friends outside of the country
3. Bank
4. Other, Specify:_____

G11 Has your household received any type of in-kind assistance during the pandemic (excluding other members of your household, etc)?

1. Yes -> G12
2. No -> section E
3. I don't know – section E
4. Refuse to answer – section E

G12 From which source(s) have you received the in-kind assistance? Mark all that apply.

1. Family/friends
2. Government programmes
3. Shop-owner nearby
4. Special programs of local civil society organizations
5. Special programs of foreign civil society organizations (e.g. UNICEF, …)
6. Other

H. MEASURES IMPLEMENTED BY THE GOVERNMENT

1. **Did you apply for the financial assistance from the government ("100€" in June 2020).**
   - Yes, I applied and received the money – H3
   - Yes, I applied, but haven't received the funds – H5
   - No, I haven't applied -H5

2. **To the best of your knowledge, how many of your household members including yourself applied/received financial assistance?**
   - _____ household members applied
   - _____ household members received => H5

3. **Was this measure important for your household budget?**
   1 – not important; 2 – somewhat important; 3 – important; 4 – very important;

4. **What did you spend this money on (one response)?**
   - Essential consumption (food, housing, paying bills)
   - Clothes, Durables
   - Health expenditures
   - Spent it in a restaurant or a bar
   - Other personal consumption (recreation, culture, education)
   - To cover expenditures that occurred due to COVID-19 (childcare, to adjust home to work, home schooling etc.)
   - I gave it to another family member
   - I gave it to charity
   - Don't know / can't remember
   - Don't want to answer

5. Did you or member of your household receive any of the below stated forms of financial assistance in 2019:

		Yes	If the answer is YES, please write down the value received in 2019	No
1	Monetary social assistance	1		2
2	Child allowance	1		2
3	Unemployment benefits	1		2
4	Redundancy pay for termination of employment	1		2

6. Did you or member of your household receive any of the below stated forms of financial assistance in 2020:

		Yes	If the answer is YES, please write down the value received in 2020	No
1	Monetary social assistance	1		2
2	Child allowance	1		2
3	Unemployment benefits	1		2
4	Redundancy pay for termination of employment	1		2

7. **To what extent do you agree or disagree with the statement**
The government should take measures to reduce differences in income levels

1 - Agree strongly 2 - Agree 3- Neither agree nor disagree 4 - Disagree 5 - Disagree strongly

8. Has this opinion changed since before the COVID-19 crisis?
- o Yes, now I agree / agree more strongly with the statement
- o Yes, now I disagree / disagree more strongly with the statement
- o No, the answer would have been the same

I. DIVISION OF HOUSEHOLD CHOIRS AND CHILD CARE DURING THE PANDEMIC

Think about the work that your partner and you do at home such as time spent cooking, cleaning, doing the laundry, taking care of children and helping them with their educational activities.

I1. How did you divide the household choirs between the two of you (conditional on having a partner) before the corona crisis (January/February 2020)?

1. Always myself
2. More myself than partner
3. Equal division between me and partner
4. More partner than myself
5. Always partner
6. I don't have a partner

I2. Since the corona crisis started in 2020, how do you divide household chores between the two of you (conditional on having a partner) (March 2020 until today)?

1. Always myself
2. More myself than partner
3. Equal division between me and partner
4. More partner than myself
5. Always partner
6. I don't have a partner

I3. Compared to the situation before the corona crisis, would you say that the tasks and work that you perform at home have increased today?
1. Yes, significantly -> I4
2. Yes, moderately -> I4
3. No change, remained the same -> I5
4. I work less -> I5
5. I don't know – I5
6. Refuse to answer – I5

I4. Which task has increased the most?
1. Caring for children
2. Helping children with school
3. Meals preparation
4. Cleaning the house
5. Other, please specify _____

I5. How many children do you have living with you who are aged 0 to 6.5 (excluding school children) and for whom you are the parent or guardian?
1. 1 child
2. 2 children
3. 3 children
4. 4 children or more
5. I don't have any children aged 0-6.5 currently living with me

I6. How many children do you have living with you who are aged 6.5 to 19 and for whom you are the parent or guardian, and who are currently enrolled in a school or college?
1. 1 child -> I7
2. 2 children -> I7
3. 3 children -> I7
4. 4 children or more -> I7
5. I don't have any children aged 6.5 to 19 currently living with me, enrolled in school or college -> END OF QUESTIONNAIRE
6. I don't know – I7
7. Refuse to answer – I7

I7. Before the pandemic started in March 2020, how many hours per week did you spend on school related activities with your children? _____ hours

I8. Before the pandemic started in March 2020, how many hours per week did your partner spend on school related activities with your children? _____ hours

I9. Since March 2020, how many hours per week do you spend on school related activities with your children on average? _____ hours

I10. Since March 2020, how many hours per week does your partner spend on school related activities with your children on average? _____ hours

I11. Since the start of the pandemic in March 2020, did your household incur any additional financial expenses due to online schooling such as (select all that apply):
1. Additional private tutoring
2. New computer
3. New laptop
4. New tablet
5. New mobile phone
6. Other, please specify _____

I12. Based on your previous answer, can you estimate the total additional schooling costs that you incurred due to online schooling? Provide the amount in dinars.

_____ RSD

I13. Since the start of the pandemic in March 2020, did it ever happen to any of your children that he/she could not participate in online classes due to (select all that apply):
1. No access to internet
2. No access to laptop/tablet
3. No access to mobile phone
4. Other, please specify _____