

Gender gap in urban job market during the pandemic – the case of Ukraine

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Abstract

Remarkable resistance of Ukraine has become in the world focus starting from the dawn of February 24th, 2022. While policymakers draft plans to address the consequences of the war, it is crucial to understand the pre-war labor market context, risks of unemployment, inequalities, and sources of resilience. In this paper we study inequality in job market outcomes in 2020-2021 during another global disaster – the COVID-19 epidemic. While there is a growing literature on worsening gender gap for developed countries, not much is known about the situation in transition countries. We fill in this gap in the literature by using novel panel data from Ukraine, which enacted strict quarantine policies early on. We model four binary outcomes to identify gender gap for respondents (i) who are not working during quarantine, (ii) those who are more likely to work from home, (iii) respondents who are afraid of losing a job, and, finally, (iv) survey participants who have savings for 1 month or less if quarantine is further extended. Our pooled and random effects models consistently indicate no gender gap in the probability of not working, fearing to lose job or having savings for less than one month. This interesting result of non-deteriorating gender gap can potentially be explained by higher chances of urban Ukrainian women to switch to telecommuting compared to men. Although our findings are limited to urban households only, they provide important early evidence on the effects of gender on job market outcomes, expectations, and financial security. The results of our study will inform effective job market policies during the reconstruction period after the war.

Keywords *gender gap, unemployment, COVID-19, Ukraine*

JEL Codes *J64, D14, D84*

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1 Introduction

Remarkable resistance of Ukraine has become in the world focus starting from the dawn of February 24th, 2022. Scholars and policy makers draft blueprints to rebuild Ukrainian economy (Becker et al. 2022). Despite significant shocks to economy, surveys report that 59% of Ukrainian respondents have not lost their jobs. Moreover, the number of people who not only have their job on paper but actually work have increased from March to June from 24% to 36%¹. This surprising resilience of Ukrainian economy has to be researched further in order to guide policies and reconstruction after the war. Moreover, given that wars, conflicts, and natural disasters lead to increasing inequalities, it is crucial to understand the pre-war context of the Ukrainian job markets and its preparedness to address new challenges. In this paper we study gender inequality in job market outcomes in 2020-2021 during another global disaster – the COVID-19 epidemic. No country has escaped the pandemic crisis of COVID-19. A vast array of multidisciplinary research has documented the profound role of gender during the ongoing crisis. Medical studies (Kopel et al., 2020) and comparative psychological surveys (Sun et al., 2020) showed that women had higher rates of COVID-related stress, anxiety, and depression than men. Comparative sociological studies showed that females were more responsible than men and complied with public health protocols more diligently (Lieberoth et al. 2021). Furthermore, in terms of cultural response, it appeared that female users were more likely to tweet about the virus in the context of family, social distancing, and healthcare. In contrast, males tweeted about the global political agenda (Thelwall and Thelwall, 2020).

In addition to gender gaps in psychological and cultural response, economists have registered a significant pandemic effect on the gender gap in the job market (Alon et al., 2020). Various researchers appealed to the term “she-cession” to describe the pronounced and abrupt trend of female unemployment (Alon et al., 2021; Fabrizio, Gomes and Tavares, 2021). The reason for that is twofold. First, previous crises affected specific industries of construction and manufacturing where men were overrepresented. In sharp contrast, the COVID-19 pandemic crisis affected hospitality and tourism where women were historically present at large numbers. The second reason for the gender gap in the job market is that many schools were closed for quarantine. Therefore, most parents had to take care of children. Since childcare responsibilities are skewed towards women in most countries, this household inequality constrains women’s ability to work from home. Drawing from these two observations, researchers suggest that telecommuting is the crucial factor of new gender inequalities during the pandemic (Alon et al., 2021).

Recent studies in economics primarily focus on macro-economic consequences of the COVID-19 (Barro, Ursua and Weng, 2020; Eichenbaum, Rebelo and Trabandt, 2020; Fernandes, 2020); households’ consumption and expectations (Baker et al., 2020; Coibion, Godonichenko and Weber, 2020; Ambrocio, 2020; Rothwell and Van Drie, 2020); and “she-cession” (Alon et al., 2021; Fabrizio, Gomes and Tavares 2021). Another important set of studies focuses on the effect of COVID-19 and working arrangements on gender division of household duties in Italy (Del Boca et al, 2020), UK (Sevilla and Smith, 2020) and Spain (Farré et al, 2021).

However, most of the papers are focused on the US and OECD countries due to lack of the data leaving other parts of the world under-investigated. The omission of countries with less developed labor market institutions prevents researchers from a full understanding of alternative coping mechanisms that may prevail under different job market settings. Our goal is to close this

¹ See more in the “Gradus research” report <https://biz.liga.net/ekonomika/all/novosti/ukraintsy-vozvrachayutsya-na-rabotu-v-svoi-goroda-i-veryat-v-porajenie-rossii-opros>

gap and shed light on the gender inequality in the labor market during COVID-19 crisis in a transition country. We believe that transition countries represent an interesting special case characterized by extensive informal job market, well-educated labor force, weaker institutions, more restrictive legal code focusing on workers' rights and greater gender equality on the onset of transition in the end of 1980s. Ukraine is also a special interesting case of a democratic and independent country, which is fighting with Russia for the right to join the family of European nations since 2014. We present new data about Ukraine just one year before the brutal Russian invasion on February 24th, 2022, in order to contribute to the fast-growing literature on the COVID-19 and gender inequalities.

In particular, we are interested to study the hypothesis if women were more negatively affected by the COVID-19 as it was the case in high-income countries (the phenomenon of “she-cession”). In addition, we consider whether women are more likely to telecommute (a key mechanism to adjust to the post-COVID reality) or feel insecure in terms of losing a job or financially (which can provide motivation for additional training or second job).

Specifically, we model which respondents are likely to lose jobs; to work from home due to the COVID-19; to fear losing a job; to have savings for less than one month if the quarantine continues. Our data allow us to include a vast array of socio-demographic and socio-economic factors describing respondents and household status. We control for many individual and household characteristics including age, education, financial status, type of employer, industry and regional characteristics.

By using two surveys – from April 8th, 2020 and February 15th, 2021 – we can capture the dynamics in the gender gap in the very beginning and in the middle of the pandemic. Moreover, we can control for unobserved characteristics of the respondents using panel regression because many respondents participated in both waves.

Our pooled and random effects models consistently indicate no gender gap in the probability of not working, fearing to lose jobs or having savings for less than one month. This interesting result contradicts findings for developed countries where females are often found to be hit harder by the pandemic. Ukrainian urban female respondents, on the other hand, have higher chances of working from home. This may be a plausible explanation why “she-cession” did not happen in urban Ukraine – female respondents in Ukraine better managed to switch to telecommuting compared to men. In addition, we find that by the second wave urban Ukrainians managed to better adjust to quarantine reality.

2 Ukrainian context

2.1. Economic background

Ukraine is a transition country in Eastern Europe, which starting from 1991, has witnessed a major shift from the planned economy of the authoritarian Soviet regime to the market economy and democratic institutions. Considering the region, Ukraine has been regarded as one of the least successful transition countries in terms of GDP and wages (Braithwaite, Grootaert and Milanovic, 2016; Guriev, 2018). The GDP of Ukraine collapsed by half from 1990 to 1994 with a slow decline between 1994 and 2000 (Sutela, 2012). On average, transition countries increased per capita incomes by around 50% of what they were in 1989, whereas Ukraine did not achieve such outcomes (Guriev, 2018). Moreover, while in other transition countries, at least some income

groups managed to achieve salaries similar to the G7 countries, in Ukraine this has not been the case. The situation has somewhat improved between 2001 and 2008 but mostly due to better terms of trade (higher prices of major exports such as metals and lower prices of Russian gas) rather than reforms.

Ukrainian economic system has been often described as oligarchic and rent-seeking (Gorodnichenko and Grygorenko, 2008). Such an institutional environment has long prevented Ukraine from stable economic growth. Researchers often explain slow Ukrainian development as the result of the weak rule of law, closed ties between political power and economic elites, and corruption (Guriev, 2018; Milanovic, 1998; Restrepo et al., 2015; Sutela, 2012; World Bank, 2019). At the same time, the population decline from 1989 till the early 2000s was more salient in Ukraine than in neighboring countries. Ayhan, Gatskova and Lehmann (2020) point out that Ukraine lost about nine million people from 1991 to 2016. They attribute this loss to lower fertility rates, high mortality, and out-migration.

In terms of economic expectations and attitudes, Ukrainians tend to have gloomy views about their economy. For instance, they tend to significantly overestimate the rates of economic inequality in the country (Gimpelson and Treisman, 2018) and be quite skeptical of market reforms. In 1992, in the wake of independence, 64% of Ukrainians said that they shared rather positive attitudes towards land privatization. In 2018, 25 years after, only 20% thought the same (Brik and Shestakovskiy, 2020). Researchers explain this phenomenon with a difficult transition period, weak governmental institutions, poor local governance (lack of decentralization), and underdeveloped local economic activities (lack of participatory budgets, lack of land market reforms, the strong influence of clientelism).

Since 2014 the Ukrainian economy has been further damaged by the annexation of Crimea and the hybrid war with Russia. Losing parts of the Donetsk and Luhansk regions that specialized in mining industries were particularly harmful to the economy. This industry accounted for 25% of total exports and 15% of the total GDP of Ukraine (Havlik 2014). The destruction of physical capital, mass migration, and market disintegration after the war contributed to the diminishing of Ukrainian GDP (Coupe and Obrizan, 2016).

According to the Ptoukha Institute for Demography (2019), the percentage of people who live below the subsistence level (i.e., absolute poverty) was 43,2% in 2018. According to the same data, children below 17 and retired people (especially women) were most vulnerable to poverty. Considering the household structure, the most vulnerable to poverty was the household with three and more children and those households with at least one unemployed. Given this earlier evidence of gender inequality it is important to understand how it changed during the pandemic.

Previous studies of the individual-level Labor Force Survey during 2004-2013 showed evidence of “job polarization in Ukraine, with relative increase employment of managers, professionals, services and sales jobs, and elementary occupations, and with a significant decline in skilled manual occupations, clerks and technicians” (Kupets, 2016 p. 25). The authors concluded that Ukraine has a significant mismatch between education and labor markets and that almost 40% of employed respondents were overeducated. UN Women, FAO and UNDP (2020) report substantial gender imbalances across sectors in Ukraine. For example, women account for 82 percent of the total health and social workers (compared to 70 percent average worldwide).

Sakhno, Yuzkiv & Kobernik (2021) identified three trends related to the gender gap in the labor market during the COVID-19. First, women's employment is concentrated in sectors which are strongly affected by lockdowns (including 70% of HoReCa and trade workers being female). Second, after shutting down schools and kindergartens women had to take on additional childcare

duties which negatively affected their ability to work for pay. Finally, COVID-19 accelerated automation of many professions making many jobs traditional for women redundant. In our statistical analyses we will control for industry and occupation which will help us to identify the net effect of a gender gap after controlling for the confounding factors.

2.2 COVID-19 in Ukraine

Although the government was relatively slow with testing, coronavirus containment policies were implemented quite rapidly, with just a few confirmed cases and not a single death. A three-week nationwide quarantine was initially imposed on March 12th, 2020, which shut down all educational institutions moving classes online.² Non-citizens were banned from entering the country on March 13th, and all national and international air and rail travel was banned on March 17th. A mandatory hospital observation or self-isolation for 14 days was required for everyone entering Ukraine.³ Wearing masks or respirators in public places became obligatory with considerable fines for violation in the range from 17,000 to 34,000 UAH, which was about 700-1,500 USD.⁴ While these restrictive bans were relaxed only in mid-June of 2020, they were relatively effective in containing the pandemic. According to the OECD report (2020), there were about 57 thousand confirmed cases in Ukraine by July 2020. Among them, 1,456 resulted in death, and 29,769 were recovered. These are moderately low numbers given the size of the Ukrainian population.⁵

Over time, the national government introduced more nuanced lockdown policies, such as the so-called “adaptive quarantine” and “weekend quarantine.” (Brik, Kogut and Shapoval, 2021). Adaptive quarantine implies differential treatment of regions depending on local patterns of COVID-19 spread and the capacity of healthcare. The first adaptive quarantine was introduced in July 2020 and extended until August 31. All regions were divided into zones — “green,” “yellow,” “orange,” or “red”— based on several indicators, such as the number of cases in the last fourteen days per 100,000 people and bed occupancy in hospitals. Regulations in these zones varied from mandatory mask wearing in public in the green zones to closing public transport and educational institutions in the red zones. The “weekend quarantine” was introduced from November 13 until November 30, 2020. A range of social and economic activities was prohibited during weekends, including visiting educational institutions by a group of more than twenty people. Then, in 2021, Ukraine imposed a new nation-wide lockdown from January 8 to January 24. This nationwide lockdown then was replaced by adaptive quarantine yet again throughout most of 2021.

Some early surveys showed that urban Ukrainians varied in compliance with quarantine. For example, a survey conducted on March 15th (Liga 2020) showed that women tend to wash their hands more often than men (91% vs. 78%), and they are also more likely to use sanitizers (57% vs. 41%). Furthermore, most Ukrainians thought that their chances of getting infected with COVID-19 were not very high (mean value of 4.5 out of 10). The same survey showed that 80% of employed urban Ukrainians were eager to continue going to their workplaces despite the threat of the virus. To the best of our knowledge, there has been no systematic attempt to investigate

² <http://www.golos.com.ua/article/328891>

³ <https://mfa.gov.ua/en/news/mfa-ukraine-q-coronavirus-covid-19-quarantine-measures-entering-ukraine-obtaining-consular-support>

⁴ <https://www.kmu.gov.ua/en/news/rozyasnennya-shchodo-novih-obmezhuvalnih-zahodiv-na-period-karantinu>

⁵ One year later, on August, 29, 2021 Ukraine ranked 84th in terms of total cases per 1 million people and 50th in terms of deaths per 1 million people (with highest daily death counts in December of 2020 and April of 2021): <https://www.worldometers.info/coronavirus/country/ukraine/>

household economic expectations and job prospects in Ukraine during the COVID-19 pandemic. In what follows, we present our statistical analyses of a unique dataset to address this question.

3 Data and methodology

3.1 Gradus survey

Our research is based on two waves of online polling conducted just after two respective waves of quarantine. Our first survey was executed in April, just after the first strict lockdown introduced in March which was then partially relaxed but was enforced until June 2020. The goal of this survey was to provide the first response of individuals for policy analysis.⁶ We initiated the second survey in February 2021 - just after the second national quarantine in January 2021. The goal of this survey was to provide a comparative analysis against the first benchmarking study. A subsample of respondents took part in both waves, making our data longitudinal.

Both surveys were conducted by the Ukrainian research firm Gradus, which developed a smartphone application to recruit respondents and circulate questionnaires. Initially, all respondents were recruited from the general population of urban Ukrainians using a variety of methods, including probability-based sampling, face to face and phone interviews, distribution of promo codes, online social media advertising. The panel excludes those who live in the conflict zones in Ukraine's east as well as the Crimean Peninsula that are currently outside its government's control. Gradus applies weights based on gender, age, size of the settlement, and macro-regions to make the data representative of the Ukrainian urban adult population under age of 60. Hence, the trends discussed below may not generalize to citizens who are older or located in rural areas. Typically, respondents receive questionnaires on different subjects approximately every week and choose which surveys to answer. Occasionally, respondents are provided with small cash bonuses transferred directly to top up their mobile accounts. In case of our study, the respondents were not offered monetary incentives to ensure that the answers will not be skewed to poorer individuals who might want to get extra money in the aftermath of the quarantine.

We used two Gradus surveys in this paper. The first survey was conducted on April 8, 2020 which asked about the Orthodox Easter celebration, compliance with the stay-at-home policies, and employment changes due to the COVID-19. The survey lasted less than 24 hours, and 1,176 respondents have responded. The second survey was conducted on February 15, 2021 and 1,002 respondents participated. The number of respondents in Gradus panel changed between the two surveys due to attrition and organic growth of the users. The final sample is limited to participants who worked before quarantine and includes 827 respondents in wave 1 and 632 respondents in wave 2 of which 406 respondents participated in both waves. In both surveys, we asked questions about "previous quarantine" to ensure that respondents reacted to the most recent governmental regulation.

The main caveat of the data is the exclusion of rural territories, which clearly limits our understanding of gender gap in the labor markets in the countryside and smaller cities with a population of less than 50 thousand. Nevertheless, urban Ukraine is quite diverse geographically and in terms of skills and industries (Kupets, 2016; Ayhan, Gatskova and Lehmann, 2020). We focus our attention on those variables that can explain the change in the gender employment inequality in urban Ukraine and provide our insights for the respective policies. Our study can be

⁶ <https://voxukraine.org/en/covid-19-quarantine-and-the-job-market-expectations-in-urban-ukraine/>

extended once rural areas are added, but we suspect that economic activities in cities are more affected by quarantine given higher population density.

Despite this limitation, our data still provides important insights for better understanding of the gender gap in employment and telecommuting during the COVID-19. As we mentioned in the introduction, telecommuting has become one of the central factors in the study of the pandemic. In Ukraine, most telecommuting is done in urban areas. Furthermore, the attempts of national government to quarantine Ukrainians met significant local resistance in urban areas (Brik, Kogut and Shapoval, 2021). For instance, on May 11, 2020 the local authorities of the city of Cherkasy partially relaxed quarantine for business, ten days earlier than the national government schedule. On August 3, 2020 the local authorities of Ternopil refused to follow the governmental classification of their region as a “red zone” (Brik, Kogut and Shapoval, 2021). These examples provide additional justification to study urban parts of Ukraine, since these specific territories experienced significant economic grievances during the pandemic. Construction industries, recreational businesses, wholesale and transportation, large educational and health institutions in urban areas suffered from the lockdown to an extent that even local politicians resisted to national policies. Taking together these details, running a survey in these respective areas makes more sense from the perspective of respondents’ immediate experience and relevant policy analysis.

3.2 Methodology

Given the scholarly attention to the issues of unemployment, working at home, and poverty (Alon et al., 2021), we constructed four *dependent variables* related to the job market effects on the household well-being:

“Not working” – equal to 1 for respondents who answered that there is no work for them and they are fired, on paid or unpaid leave (and 0 otherwise)

“Working from home” – equal to 1 for those who work from home part or full time (and 0 otherwise)

“Fears to lose a job” – equal to 1 for respondents who are afraid to lose a job (and 0 otherwise)

“Savings for <1 month” – for respondents who have enough financial resources for one month or less (and 0 otherwise)

Thus, variable “Not working” reflects underdeveloped job market in Ukraine and is more general than a standard definition of being unemployed because it also includes respondents in a shadow sector and those who were forced to paid or unpaid leave during quarantine. Variable “Working from home” is included in order to capture the possibility of telecommuting as a key mediator of keeping a job. Although variables “Fears to lose a job” and “Savings for <1 month” are not directly related to the job market, we include them in order to identify respondents who may be forced to look for additional coping strategies (such as the need in additional training or second job).

The first two variables are only asked of respondents who worked before quarantine, while the last two are asked of all respondents. However, for the other two dependent variables we only include respondents who actually had a job before the quarantine for comparison.⁷

For each of the dependent variables we first have estimated the following linear probability model with robust standard errors clustered at the city level

⁷ We obtain qualitatively similar results if we include all respondents in the last model.

$$DV_i = \alpha_0 + \alpha_F \cdot F + \alpha_{w2} \cdot W2 + SD \cdot \alpha_{SD}' + SE \cdot \alpha_{SE}' + IN \cdot \alpha_{IN}' + RE \cdot \alpha_{RE}' + \varepsilon_i, \quad (1)$$

where ε_i is the individual error term for respondent i . In addition, we estimate a random effects panel regression with unbalanced sample and clustering at a city level for comparison.

Our key variable of interest is gender gap measured by α_F coefficient for female respondents. If she-cession holds in Ukraine like in high-income countries, then we would expect this coefficient to be negative and significant for the first variable “Not working”. We also control for the difference with the second wave captured by the coefficient α_{w2} . If urban Ukrainians learned to adjust to the quarantine over time, then we would expect this coefficient to be negative and significant.

In addition, we include a rich set of socio-demographic (SD) and socio-economic factors (SE), regional characteristics (RC), and indicators for industry (IN). Our list of independent variables is in general consistent with previous studies of job market outcomes in transition countries (Torosyan, Pignatti and Obrizan 2018).

Specifically, socio-demographic factors (SD) control for three age groups of 25-34, 35-44 and 45+ years old (with a base age group of 18-24 years old), dummies for post-secondary and higher education, an indicator whether respondent knows the number of COVID cases within +/-10% of the actual number on the date of the interview.

Socio-economic (SE) factors include three measures of financial status and job market characteristics. In particular, we define as very poor those respondents who are saving on food, poor respondents are defined as those who are saving on clothes and wealthy respondents include those who can afford expensive things (such as TV). The base category includes respondents with middle income. Job market characteristics include indicators for respondents who are employed unofficially and those who are entrepreneurs or freelancers (with officially employed respondents being the base category), respondents from private sector and those from NGOs (with respondents in the government sector being the base category) and an indicator for a supervisory position before quarantine.

Regional characteristics (RC) include dummies for five regions of Ukraine and Kyiv (with the central region being the base)⁸, an indicator for living in a city with a population from 100 thousand to 1 million inhabitants, and another one for living in a city with more than 1 million people (with cities smaller than 100 thousand people serving as a base). A great advantage of our dataset is that we also have indicators for one of the 16 possible sectors of economic activity (IN).⁹ We would expect that respondents working in industries which are more suitable for telecommuting will also be more likely to keep their job.

⁸ Eastern region includes Donetsk Oblast, Kharkiv Oblast and Luhansk Oblast. Central region includes Cherkasy Oblast, Dnipropetrovsk Oblast, Khmelnytskyi Oblast, Kirovohrad Oblast, Poltava Oblast and Vinnytsia Oblast. Northern region includes Chernihiv Oblast, Kyiv Oblast, Sumy Oblast and Zhytomyr Oblast. Southern region includes Kherson Oblast, Mykolaiv Oblast, Odessa Oblast and Zaporizhzhia Oblast. Western region includes Chernivtsi Oblast, Ivano-Frankivsk Oblast, Lviv Oblast, Rivne Oblast, Ternopil Oblast, Volyn Oblast and Zakarpattia Oblast.

⁹ The complete list of industries includes Public administration; NGO; Health care and social assistance; Culture, sports and entertainment; Research; Education; Hotels and restaurants; Programming and IT; Manufacturing; Advertising and mass media; Agriculture, forestry and fishing; Construction; Sales; Transport and communications; Finance, banking and legal; Other.

4 Results

4.1 Descriptive Statistics

The descriptive statistics for the respondents in the final sample are provided in Table 1. First, we consider how COVID affected respondents who had jobs before quarantine. The share of respondents who lost jobs (including paid and unpaid leave) decreased from 24.5% on April 8th, 2020 to 10.6% on February 15th, 2021. One plausible explanation is that respondents adjusted because many jobs re-opened under new conditions. This view can be partially confirmed by a reduction in the share of people working remotely from 40.5% in wave 1 to 25.8% in wave 2. There also was observed a reduction (from 30.0% to 23.6%) in the share of respondents who were afraid to lose a job because of COVID. The most striking observation in wave 1 was that 54.4% of respondents did not have savings for more than 1 month if quarantine were to be continued. There was only a marginal improvement in wave 2 with 50.5% of respondents having savings for less than one month.

There are also some notable differences in dependent variables by gender. 23.5% of females stopped working because of quarantine in wave 1 compared to only 12.0% in wave 2. 25.8% of males were not working because of quarantine in wave 1 compared to only 8.6% in wave 2. Hence, we do not observe substantial difference in job loss between genders in wave 1 and some difference in wave 2. At the same time, both genders have adjusted by the second wave. In wave 1, 46.3% of women could work at least some time from home compared to 33.3% of men in wave 2. This is interesting observation because telecommuting is a key coping strategy during quarantine and women are more likely to use it. Both genders were slightly less likely to be afraid of losing a job in wave 2: 23.7% for women compared to 27.7% in wave 1 and 23.4% for men compared to 32.8% in wave 1. Similarly, both genders have felt more financially secure by wave 2: 52.7% of women had resources for less than 1 month compared to 57.1% in wave 1 and 47.3% of men could survive at most one month compared to 51.1% in wave 1.

The sample includes 55.0% of females in wave 1 and 59.5% of females in wave 2. 34.6% of the sample in wave 1 (29.7% in wave 2) was in 25-34 age group, 31.4% (36.4% in wave 2) were of age 35-44 and 21.9% (26.9% in wave 2) of respondents were older than 45 years old. The remaining respondents are in the base age category of 18-24 years old.

The first wave includes 20.1% respondents with post-secondary education (17.6% in wave 2) and 77.0% respondents with higher education (78.2% in wave 2). The surprisingly high share of people with higher education can be partially explained by urban sample composition and partially by a lower quality of education and a large number of “diploma mills” in Ukraine (Obrizan, 2019). Only 21.6% and 18.4% of respondents in waves 1 and 2 knew the number of reported COVID cases in the world (within 10% deviation) on the date of interview. We use this indicator as an alternative measure of education.

There are only about 1% of respondents who need to save on food (very poor financial status). The share of respondents who need to save on clothing (poor financial status) increased from 7.6% to 20.1% from wave 1 to wave 2 accompanied by a reduction in share of wealthy respondents from 38.6% to 32.0%. The remaining share of respondents was in the middle financial status group (base category).

10.0% and 9.8% of respondents were working unofficially in waves 1 and 2 which reflects a large shadow economy in Ukraine. Similarly, a relatively large share of private entrepreneurs and freelancers (18.7% in wave 1 and 16.0% in wave 2) potentially indicates a degree of labor tax

evasion when companies “hire” private entrepreneurs on 5% tax instead of paying employees up to 22% of social security contribution, 1.5% of military tax and 18% of income tax on net salary (after paying social security contribution). The remaining share of respondents were working officially as hired employees (base category).

The majority of respondents were working in the private sector (66.4% in wave 1 and 63.6% in wave 2), followed by the public sector (base category) and the remaining share was employed by NGO or other sectors (9.6% in wave 1 and 9.3% in wave 2). 21.9% in wave 1 and 18.8% in wave 2 held supervisory positions before quarantine.

Slightly less than a quarter of all respondents lived in Kyiv and central region (base category) and other regions have between 10.6% and 15.0% of respondents in wave 1 and between 9.5% and 14.7% of respondents in wave 2. 40.7% of the sample in wave 1 (42.7% in wave 2) lived in mid-size cities with a population between 100 thousand and 1 million. 47.4% of respondents in wave 1 (49.1% in wave 2) lived in large cities with population in excess of 1 million. The remaining share of respondents lived in small cities with population under 100 thousand people (base category).

Hence, observable characteristics of respondents are overall comparable between the two waves. Next, we proceed to the estimation of the potential gender gap in key variables of interest related to the job market.

Table 1. Descriptive statistics for key variables across two waves

Variables	Wave 1: April 8th 2020		Wave 2: Feb 15th 2021	
	Mean	St. Dev.	Mean	St. Dev.
Not working	0.245	0.431	0.106	0.308
Working from home	0.405	0.491	0.258	0.438
Fears to lose job	0.300	0.458	0.236	0.425
Savings for <1 month	0.544	0.498	0.505	0.500
Female	0.550	0.498	0.595	0.491
Age 25-34	0.346	0.476	0.297	0.458
Age 35-44	0.314	0.465	0.364	0.482
Age 45+	0.219	0.414	0.269	0.444
Post-secondary education	0.201	0.401	0.176	0.381
Higher education	0.770	0.421	0.782	0.413
Knows # of COVID cases	0.216	0.412	0.184	0.387
Very poor financial status	0.013	0.115	0.008	0.089
Poor financial status	0.076	0.265	0.201	0.401
Wealthy financial status	0.386	0.487	0.320	0.467
Unofficially employed	0.100	0.301	0.098	0.298
Entrepreneur/Freelancer	0.187	0.390	0.160	0.367
Works in private sector	0.664	0.473	0.636	0.482
Works in NGO/other sector	0.096	0.294	0.093	0.291
Supervisor before quarantine	0.219	0.414	0.188	0.391
Eastern region	0.110	0.313	0.128	0.335
Kyiv	0.262	0.440	0.255	0.436
Northern region	0.106	0.309	0.095	0.293
Southern region	0.133	0.340	0.147	0.355
Western region	0.150	0.357	0.134	0.341

City 100-1M	0.407	0.492	0.427	0.495
City 1M+	0.474	0.500	0.491	0.500
Agriculture, forestry and fishing	0.021	0.142	0.011	0.105
Manufacturing	0.125	0.330	0.130	0.336
Construction	0.039	0.193	0.054	0.226
Sales	0.145	0.352	0.136	0.343
Programming and IT	0.081	0.273	0.068	0.252
Hotels and restaurants	0.023	0.150	0.021	0.142
Transport and communications	0.053	0.225	0.060	0.238
Finance, banking and legal	0.058	0.234	0.082	0.275
Research	0.046	0.210	0.036	0.187
Advertising and mass media	0.065	0.247	0.052	0.223
Public administration	0.041	0.199	0.049	0.216
Education	0.092	0.289	0.109	0.312
Health care and social assistance	0.065	0.247	0.066	0.249
Culture, sports and entertainment	0.037	0.190	0.021	0.142
NGO	0.021	0.142	0.014	0.119

Note: Authors' calculations based on the Gradus surveys. The final sample is limited to participants who worked before quarantine and includes 827 respondents in wave 1 and 632 respondents in wave 2.

4.2 Regression results

We estimated linear probability models (LPMs) for our four dependent variables related to the job market and financial prospects of urban Ukrainian households. Despite certain limitations, like the possibility of obtaining predicted probabilities outside of 0 to 1 range, LPM has a clear advantage of the ease of interpretation of the marginal effect. We have re-run all the models using logit and obtained similar results (available upon request) in terms of main significant factors.

Table 2 reports the estimated LPM models. Two striking results come to attention immediately. First, there is no gender gap in terms of losing job due to quarantine, fear to lose job or financial insecurity. What's more, females in urban Ukraine are more likely to work from home by a considerable 10.0% points.

This is a very interesting result which contradicts the “she-cession” effects found in developed countries (Alon et al., 2021; Fabrizio, Gomes and Tavares, 2021) and warrants some discussion. This finding is probably not surprising for scholars in transition economics who are familiar with long-standing efforts of former socialist countries to declare and promote gender equality in education and occupations. Partially, this was done for ideological reasons to show that socialist regimes are better and, partially, because industrialization and postwar labor shortages made every worker count. East and West Germany represent a particularly interesting example. Just before the unification in 1990 labor force participation rate for women was about 89% in East Germany compared to only 56% in West Germany (Lippmann & Senik, 2018 and sources therein). Even 10 years later female labor force participation rate in the former East Germany was still much higher (around 80% versus 65% in the former West Germany). Hence, the absence of she-cession in Ukraine can at least partially be attributed to more equal representation of both genders in different occupations and industries. In addition, our second regression shows that women were more successful in telecommuting which potentially offsets the negative effect of higher female representation in industries negatively affected by the COVID.

Another interesting result indicates lower probabilities of not working (by 14.5% points), working from home (by 13.9% points), fear to lose job (by 6.9% points) and financial insecurity (by 10.1% points) during the second wave of the survey. This may indicate that urban Ukrainians have adjusted to the ongoing pandemic in the middle run, perhaps, because of more adaptive quarantine policies since mass vaccination has not started in Ukraine in February 2021 yet.

Some other interesting results warrant discussion which we limit to coefficients significant at 1%. Knowledge of the # of COVID cases is associated with lower probability of not working (the first dependent variable) by 6.2% while higher education is not significant. Unofficially employed and freelancers were less likely to work during quarantine by considerable 19.6% and 10.8% points. Hence, even in transition country with weak institutions being officially employed protects against unemployment. Being a supervisor before quarantine is associated with 6.7% points lower probability of not working. Working in hotels and restaurants increases probability of not working by a huge 53.1% points while employees in IT, research and advertising have lower chances of not working by 17.1%, 15.3% and 10.0% points correspondingly.

Although the number of respondents working from home (which is our second dependent variable) has decreased by wave 2, they still possess some unique characteristics. Respondents with higher education and those who know the number of COVID cases have 10.7% and 6.1% points higher chances of working from home. Similarly, respondents from Kyiv have 11.3% higher probability of working from home. Respondents employed in manufacturing and health care are less likely to work from home by 16.7% and 19.0% points while those working in Education have 28.7% points higher probability of working from home.

Since fears are often irrational it is not surprising that there are not so many coefficients significant at 1% for the third dependent variable – fear to lose job. Respondents in wealthy financial status are 8.5% points less likely to be afraid of job loss. Those working in private sector and living in the Eastern region on the contrary are more likely to fear job loss by 11.9% and 10.6% points.

By wave 2 there is 10.1% reduction in the share of respondents who have savings for less than one month which is our fourth and last variable. We observe that older respondents are 11.6-13.9% points more likely to have savings for less than 1 month compared to the base category of 18-24 years old. This result is a bit surprising given the Modigliani life-cycle model with savings increasing with age but, perhaps, reflects insecure transition context in Ukraine. Higher education and being informed about the number of COVID-19 cases, on the other hand, reduces the probability of being financially insecure by 13.1% and 7.8% points correspondingly. Respondents in poor financial status are more likely to have savings for less than one month by 23.6% points while wealthy respondents are 23.3% points less likely to have such low savings. Working in the private sector and NGOs are also less likely to have savings for less than one month by 12.0% and 9.8% (significant at 5%) points compared to the government sector. Similarly, respondents in supervisory roles are 7.9% points less likely to have low savings. What is interesting is that regional characteristics and the industry are not associated with low saving at 1% level of statistical significance.

The model fit is also good overall given a binary nature of the dependent variables. Adjusted R-squared ranges from the minimum of 4.1% for the dependent variable “Fears to lose job” (which is probably not surprising given that fears are often irrational) to 16.0-16.3% for other dependent variables.

Table 2. Results of the linear probability model estimation

	Not working	Working from home	Fears to lose job	Savings for <1 month
	(I)	(II)	(III)	(IV)
Female	-0.005 (0.022)	0.100*** (0.024)	-0.039 (0.032)	0.020 (0.026)
Wave 2	-0.145*** (0.019)	-0.139*** (0.026)	-0.069*** (0.015)	-0.101*** (0.030)
Age 25-34	0.081** (0.034)	-0.068 (0.048)	0.045 (0.032)	0.120*** (0.034)
Age 35-44	0.003 (0.034)	-0.025 (0.047)	0.022 (0.034)	0.116*** (0.042)
Age 45+	0.058 (0.046)	-0.031 (0.061)	0.059 (0.038)	0.139*** (0.037)
Higher education	-0.031 (0.050)	0.107*** (0.035)	-0.004 (0.048)	-0.131** (0.065)
Knows # of COVID cases	-0.062*** (0.017)	0.061** (0.027)	-0.036 (0.029)	-0.078*** (0.020)
Very poor financial status	0.080 (0.133)	-0.188** (0.072)	-0.032 (0.098)	0.183* (0.099)
Poor financial status	0.034 (0.030)	-0.038 (0.031)	0.022 (0.048)	0.236*** (0.043)
Wealthy financial status	-0.016 (0.021)	0.016 (0.027)	-0.085*** (0.022)	-0.233*** (0.026)
Unofficially employed	0.196*** (0.045)	-0.040 (0.031)	-0.020 (0.044)	0.055 (0.038)
Entrepreneur/Freelancer	0.108*** (0.027)	-0.045 (0.030)	-0.047 (0.029)	-0.018 (0.030)
Works in private sector	-0.007 (0.032)	0.083** (0.036)	0.119*** (0.030)	-0.120*** (0.033)
Works in NGO/other sector	-0.052 (0.032)	0.051 (0.034)	0.020 (0.034)	-0.098** (0.047)
Supervisor before quarantine	-0.067*** (0.021)	0.026 (0.036)	-0.035 (0.026)	-0.079*** (0.029)
Eastern region	0.061** (0.028)	0.044 (0.042)	0.106*** (0.034)	0.050 (0.042)
Kyiv	0.024 (0.020)	0.113*** (0.035)	-0.033 (0.029)	0.010 (0.036)
City 1M+	0.010 (0.035)	0.053 (0.041)	0.096** (0.042)	-0.021 (0.048)
Manufacturing	0.045 (0.057)	-0.167*** (0.046)	-0.114 (0.070)	0.012 (0.061)
Construction	0.080	-0.024	-0.162**	0.014

	(0.067)	(0.068)	(0.063)	(0.064)
Programming and IT	-0.171***	0.138*	-0.098*	-0.111**
	(0.057)	(0.075)	(0.053)	(0.049)
Hotels and restaurants	0.531***	-0.191**	-0.022	0.020
	(0.065)	(0.074)	(0.089)	(0.092)
Research	-0.153***	0.190**	0.068	-0.177**
	(0.037)	(0.078)	(0.049)	(0.080)
Advertising and mass media	-0.100**	0.150**	-0.023	-0.089*
	(0.049)	(0.064)	(0.060)	(0.050)
Public administration	-0.087	-0.065	-0.132**	-0.169**
	(0.053)	(0.081)	(0.052)	(0.073)
Education	-0.056	0.287***	-0.128**	-0.079
	(0.044)	(0.071)	(0.049)	(0.053)
Health care and social assistance	-0.040	-0.190***	-0.141**	-0.106
	(0.087)	(0.056)	(0.068)	(0.072)
Constant	0.212**	0.136*	0.248***	0.779***
	(0.083)	(0.073)	(0.080)	(0.084)
Observations	1459	1459	1459	1459
Adjusted R-squared	0.160	0.163	0.041	0.163

*Notes: Authors' calculations based on the Gradus surveys. All models use robust standard errors clustered at the city level. Model control for all explanatory variables, but only coefficients significant at 5% or less are reported to save space. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.*

Table 3 reports the results of the unbalanced panel model with random effects clustered at the level of cities. The findings are overall consistent with a pooled model. Most importantly, there is also no gender gap in terms of losing a job during quarantine, fear to lose job or limited financial resources. As before, female respondents are actually more likely to work from home by 9.5% points and coefficient is significant at 1%. Hence, the results remain robust even after we control for unobserved heterogeneity (which is assumed to be constant and not correlated with independent variables) in the random effects model.

Table 3. Results of the unbalanced panel model with random effects

	Not working	Working from home	Fears to lose job	Savings for <1 month
	(I)	(II)	(III)	(IV)
Female	-0.006	0.095***	-0.041	0.020
	(0.023)	(0.023)	(0.029)	(0.029)
Age 25-34	0.077**	-0.088*	0.050	0.102***
	(0.037)	(0.051)	(0.034)	(0.033)
Knows # of COVID cases	-0.052**	0.066***	-0.006	-0.021
	(0.023)	(0.025)	(0.026)	(0.021)
Very poor financial status	0.017	-0.166**	-0.005	0.147

	(0.129)	(0.077)	(0.102)	(0.105)
Poor financial status	-0.011	-0.079**	-0.004	0.191***
	(0.032)	(0.032)	(0.046)	(0.032)
Wealthy financial status	0.004	0.023	-0.047*	-0.188***
	(0.025)	(0.025)	(0.025)	(0.028)
Unofficially employed	0.141***	-0.032	-0.019	0.037
	(0.043)	(0.030)	(0.042)	(0.036)
Entrepreneur/Freelancer	0.104***	-0.045	-0.031	-0.011
	(0.027)	(0.030)	(0.028)	(0.030)
Works in private sector	0.008	0.088**	0.097***	-0.092***
	(0.031)	(0.038)	(0.029)	(0.033)
Supervisor before quarantine	-0.066***	0.034	-0.047*	-0.079***
	(0.022)	(0.035)	(0.025)	(0.029)
Eastern region	0.045	0.037	0.112***	0.037
	(0.028)	(0.041)	(0.031)	(0.047)
Kyiv	0.008	0.106***	-0.048*	-0.012
	(0.020)	(0.035)	(0.027)	(0.035)
City 1M+	-0.011	0.040	0.085**	-0.027
	(0.033)	(0.045)	(0.041)	(0.050)
Manufacturing	0.031	-0.169***	-0.100	0.018
	(0.057)	(0.047)	(0.067)	(0.060)
Construction	0.075	-0.053	-0.178***	0.019
	(0.066)	(0.072)	(0.062)	(0.062)
Programming and IT	-0.196***	0.134*	-0.100*	-0.106**
	(0.069)	(0.068)	(0.053)	(0.048)
Hotels and restaurants	0.540***	-0.192***	0.020	0.071
	(0.068)	(0.074)	(0.104)	(0.114)
Research	-0.144***	0.185**	0.042	-0.129*
	(0.045)	(0.079)	(0.056)	(0.075)
Advertising and mass media	-0.100*	0.148**	0.012	-0.060
	(0.053)	(0.065)	(0.065)	(0.053)
Public administration	-0.104*	-0.066	-0.136**	-0.144**
	(0.054)	(0.081)	(0.054)	(0.071)
Education	-0.063	0.268***	-0.139**	-0.042
	(0.049)	(0.072)	(0.057)	(0.053)
Health care and social assistance	-0.056	-0.187***	-0.160***	-0.065
	(0.087)	(0.053)	(0.061)	(0.065)
Constant	0.213***	0.101	0.234***	0.731***
	(0.076)	(0.069)	(0.077)	(0.090)
Observations	1459	1459	1459	1459

Notes: Authors' calculations based on the Gradus surveys. All models are clustered at the city level. Model control for all explanatory variables, but only coefficients significant at 5% or less are reported to save space. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

5 Discussion and conclusions

To the best of our knowledge, this is one of the first papers which considers the effects of COVID-19 on the job market in a transition country. Most of the research so far has focused on high income countries with well-developed labor markets and stable systems of social support. Our contribution to the literature stems from unique Gradus surveys which allow us to study the effects of COVID in a transition country context with its excessive informal employment, well-educated labor force and some remaining post-socialist rigidities. This context provides a unique opportunity to study alternative coping strategies that work differently than in developed countries.

Our empirical findings derived from a pooled and random effects model indicate that urban women and urban men had similar chances to preserve their jobs in all regions of Ukraine after two lockdowns. Moreover, they expressed similar (and moderate) levels of fear about losing a job. This shows that at least in urban Ukraine the “she-cession” was not the case since the gender gap in unemployment was not observed. This result is interesting because it contradicts the findings for developed countries where women were hit disproportionately harder by the pandemic. Our models also suggest a possible explanation of this finding since we also registered that Ukrainian urban female were more likely to work from home. While in developed countries women could have lost their jobs, Ukrainian urban females were able to switch to working from home. Our findings confirm the prior expectation that telecommuting becomes a crucial factor which can mitigate gender inequalities during the pandemic (Alon et al., 2021).

At the same time, our findings indicate that the crisis is likely to exacerbate other socio-economic inequalities: better educated respondents and those living in Kyiv are more likely to secure work from home. This implies, that urban males and females who live in other parts of Ukraine and work in manufacturing and HORECA are less likely to be employed. Future academic work of the gender gap during the COVID-19 pandemic will benefit greatly from investigating interaction effects of gender, education, and spatial distribution of industries. Gender composition of educational groups and occupations have been a major research stream in social science (England, Levine and Mishel 2020), which warrants an attention to these variables in economics. In terms of policy suggestions, the government of Ukraine should pay more attention to the labor market in regions.

Overall, our findings match the comparative studies and show that in Ukraine the role of telecommuting and working from home has become a crucial component of the labor market. However, the salient “she-cession” was not observed. We can pair this finding with another set of findings that may be unique to a transition country like Ukraine. For example, better educated respondents were not protected from job loss. These findings may indicate low quality of education.

While we do realize that not all of our results have causal interpretation since we only partially rely on panel data (and we do not have information about pre-covid status and attitudes of respondents), they still identify key correlates of the short-term job market outcomes as well as expectations regarding the new quarantine reality. Our paper has additional limitations stemming from the lack of reliable and timely academic surveys of the job market in Ukraine. Hence, we had to rely on a marketing survey which does not provide information about rural respondents, working conditions of spouses, wages and other potentially important determinants of job market outcomes. In addition, for a meaningful measurement of the COVID effects on employment we limit our final sample only to respondents who worked before the quarantine and not the entire urban population. Nevertheless, the longitudinal nature of the data allows us to see that most respondents actually

developed a resilience to the crisis. Urban Ukrainians were less affected by the second lockdown when compared to the first one.

Finally, the results of our study will inform effective job market policies during the reconstruction period after the war. We found that urban women and urban men had similar chances to preserve their jobs after two lockdowns. This is a potential explanation of resilience of the Ukrainian job market to the new challenge of war. Narrowing inequalities and providing wider range of social groups with economic resources could be a potential source of resilience during the war, allowing Ukrainians to have more resources to support their government, donate to army and volunteers, support displaced people, and have more resources when moving to other regions. Considering reconstruction, we found inequalities between Kyiv and other regions, which implies that the postwar reconstruction effort should also address regional development.

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