THE EFFECT OF COVID-19 ON PRECARIOUS WORKERS IN NORTH MACEDONIA

Tracking low-pay workers, unpaid family workers, paid domestic workers, workers with atypical working contracts and informal workers

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THE EFFECT OF COVID-19 ON PRECARIOUS WORKERS IN NORTH MACEDONIA

Tracking low-pay workers, unpaid family workers, paid domestic workers, workers with atypical working contracts and informal workers

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INTRODUCTION

The socio-economic crisis caused by Covid-19, the coronavirus that outbreak and started spreading in North Macedonia in early-March 2020, disrupted the fairly stable economic environment and favorable labor market conditions. As elsewhere, government's rapid response involved a widespread lockdown, starting with the closure of the physical education system on March 11, 2020, followed by a series of measures aimed to slow the virus transmission, prevent health-system failure and minimize the number of lives lost.

The pandemic occurred in a complex political situation, with dissolved parliament and caretaker government established in January 2020 with a limited mandate to organize fair and democratic elections scheduled for April 12, 2020. Due to such circumstances, it was only the President of the country who could declare a state of emergency - on March 18, 2020, thus restoring the lawmaking power with the government and allowing it to issue decrees with the power of law. Subsequently, a number of restrictive measures were adopted, such as quarantine, curfew, travel ban, complete closure of the hospitality sector, restriction of the work of other sectors (most notably trade), paid release of parents of children up to 10 years from work, etc. The complete closure of some sectors and the limited operations in others led to a drastic decline of country's economy: 14.9% in the second quarter of 2020. The closure of borders and movement restrictions contributed to such reduced activity, affecting mainly the hospitality and transport sectors. Many companies whose supply chains were significantly interrupted experienced a reduction in the production volume or even temporary cessation of operations.

The functioning of the labor market was disrupted. The early assessment of the pandemic impact onto the Macedonian labor market, conducted by ILO/EBDR (2020), identified nine sectors that would suffer a greatest economic pain: 1. food and beverage service activities; 2. retail trade, except for motor vehicles and motorcycles; 3. land transport and transport via pipelines; 4. warehousing and support activities for transportation; 5. other personal service activities; 6. manufacture of food products; 7. construction of buildings; 8. specialized construction activities; 9. services to buildings and landscape activities. The jobs in these sectors are characterized as precarious with respect to several aspects such as: low wages, non-standard working arrangements, unwritten employment contracts and/or unregistered businesses, which additionally increased the

burden of the pandemic. Majority of workers in the most affected sectors has been furloughed or faced a reduction of working hours and salaries, rather than dismissals, as measures undertaken by employers in expectation of a support by the government.

As a response to the crisis, the government devised measures to alleviate socio-economic consequences of the pandemic in six subsequent economic packages. The sets relating to workers and labor market could be roughly classified as those aimed to save jobs through subsidizing wages and supporting companies' liquidity; and those aimed to prevent and/or compensate income loss among citizens.

The first set included subsidizing wages and social contributions, deferral of profit tax pre-payments, loans at favorable terms (with zero or subsidized interest), loan guarantees and some sector-specific support. Two key job-retention measures involved a minimum wage subsidy, for the companies experiencing more than 30% decline in revenues during the pandemic compared to the average of 2019, as well as a subsidy of 50 per cent of the social contributions up to the level of the average wage in the hardest hit sectors (tourism, hospitality and transport), both covering the period April-June 2020. According to our estimations, 60 thousand jobs that were at immediate risk to be lost were retained due to the employment-retention measures (Finance Think, 2020a). This measure has been re-introduced, with narrower eligibility criteria, in the wake of the next pandemic waves, of the autumn 2020 and of the spring 2021.

The second set of measures was directed toward sustaining the living standard of the most vulnerable citizens through increasing the access to services and relaxation of the eligibility criteria for guaranteed minimum assistance (GMA). The relaxation concerned the ownership of a real estate where the household resides, a car older than 5 years and a construction land parcel smaller than 500 m2, all of which made applicants ineligible before. In addition, the income criterion was to be assessed on the previous month's receipts, rather than on the previous three, thus allowing quick entrance of households in the GMA system after their income fell due to Covid-19. This was particularly important to facilitate fast safety net for informal workers in particular. As a result of this measure, almost 24 thousand people have been rescued from extreme poverty (Finance Think, 2020b). The relaxed criteria for entering the GMA system continued to apply over 2021. Within the second set, the government deployed two one-off financial aids to low-paid, unemployed and inactive citizens in the range from 3,000 to 9,000 MKD in July and December 2020.

While limited existing evidence substantiates that the key employment-retention and income-saving measures prevented loss of jobs and compensated the income fallouts among the most vulnerable citizens, ensuring that recovery is rapid and timely, protecting precarious workers and strengthening the resilience of the labor market for a rapid response to future shocks remains a significant challenge.

The aim of this paper is to understand the socio-economic impact of the pandemic on five groups of precarious workers in North Macedonia: low-pay workers, unpaid family workers, paid domestic workers, informal workers and workers with atypical employment arrangement. Also, the paper portrays precariousness of jobs in North Macedonia, comparatively before versus during the pandemic.

The structure of the paper is as follows. The second section reviews the literature on the occurrence of precarious employment, with reference to the impact of the COVID-19 crisis. Section 3 describes the methodology used. In section 4, the socio-economic impact of the pandemic on the analyzed groups of workers is described, and the policy recommendations for each group are devised. The fifth section provides further description of jobs precariousness and analyses pandemic's impact on the probability of a worker to be in a precarious employment. The last section concludes and provides specific recommendations for improving the resilience of the labor market to future economic shocks.

OVERVIEW OF THE RELATED LITERATURE

Worker's employment is determined by many characteristics of the workplace and aspects of the worker's job, like the type of the employment contract (written or oral), its duration (permanent or temporary), the quality and security of the working conditions, the place where the worker performs the job (in office, at street, at home, at employer's home, etc.), the working time and shifts, the remuneration and social security, the formality of the business, etc. A combination of these aspects makes some workplaces more secure and decent, compared to others that are vulnerable and precarious.

2.1 PRECARIOUS EMPLOYMENT: DEFINITIONS

Generally, precarious work is a term used to describe a temporary employment which is insecure, unstable, low-pay and unprotected. Precarious workers are also those who work in dangerous working conditions, rarely receive social benefits, barely have right to unionization, have limited job control and/or regulatory protection (Jetha et al. 2020). There is no consensus in the literature on the definition and scope of precarious employment, but there are several approaches for its description. First, according to the International Labor Organization (2010), precarious or vulnerable employment is the sum of own-account workers and unpaid family workers, who are usually less likely to have formal employment contracts, adequate wages, social security or membership at trade unions. According to Saunders (2003), most of own-account workers are precarious because they are often dependent on one or few clients and have no entitlement to a minimum wage, overtime and holiday pay. Some economists (Hudson, 2006; Pollert and Charlwood, 2009) relate vulnerable employment to the risk of becoming poor, defining precarious workers as those who earn below a two-thirds of the median wage. Eurostat measures precarious work through the percentage of workers who have temporary contracts of up to three months. Such multidimensional approach defines precarious employment with a set of characteristics that make the job indecent, improper and unstable. Since the first two approaches are often criticized because there can be own-account and unpaid family workers who have decent jobs and do not face high economic risk at their workplace, as well as workers that earn above a third of the median wage but work in inadequate conditions, the multidimensional approach is most widely used in the literature. Yet, even in this approach, there is no consensus on the set of risk factors that are relevant to explain patterns of precarious employment. However, formality and duration of the employment contract, security of working conditions, earnings and collective bargaining are most commonly used.

Saunders (2003) explains that the most precarious workers are poorly paid and have no right to unionization, employment rights and social insurance. Chaykowski (2005) describes that workers with non-standard employment contracts (temporary, seasonal, part-time) are more precarious compared to those with permanent working arrangements. Cranford et al. (2002) corroborates that part-time workers are less paid and have no access to collective bargaining, hence they are more precarious compared to full-time employees. According to TUC Commission on vulnerable employment (2008, p.16) vulnerable employment is a "precarious work that places people at risk of continuing poverty and injustice resulting from an imbalance of power in the employer-worker relationship". Therefore, precarious are the workers who are low-paid, insecure, have temporary contract, work at home and face high risk of abusing their rights at the workplace.
The majority of workers in the informal economy are likewise precarious, because they barely have any employment and social protection, are low-paid, do labor-intensive work and are seasonally or irregularly engaged.
Fudge and Owens (2006) define precarious work as employment under atypical working arrangements with risk of redundancy. Greenan and Segir (2017) describe precarious work through five components: adverse physical environment, violence at the workplace, non-standard working schedule, high work intensity and low work complexity. According to Pollert and Charlwood (2009), precarious are the workers who earn below the median hourly wages and are non-unionized. O'Regan et al. (2005) equate precarious employment with poor job quality, adverse working conditions and low protection. Lewchuk (2017) and Tompa et al. (2007) explain that workers with non-standard employment contract who are involuntary part-time engaged are in a precarious work. Benach et al. (2014) highlight that precarious employment does not offer access to health insurance, social support, pension, paid sick leave, and exposes the worker to dangerous working conditions. Vosko et al. (2009) describe precarious work as short-term paid work that is poorly paid and does not provide sufficient legal protection. Some studies note that a worker is in precarious employment if he/she performs the job at the employer's house, because it is less likely that he/she has written contract, access to social protection, health care and collective bargaining (WIEGO, 2020). They are also poorly paid and have worst working conditions within the informal economy ILO (undated).

2.2 DETERMINANTS OF PRECARIOUS EMPLOYMENT

Whether a workplace is precarious and a worker is exposed to an adverse treatment depends on many interrelated factors. According to Bewley and Forth (2010), there are four important factors that may impact job's precariousness: labor market characteristics, the external product market, employer and employee. If the labor market

provides opportunities for quick re-employment, employees will not tolerate any adverse treatment and the appearance of precarious employment will be less likely.
If the employer has high power at their product market, such as discretionary pricing power, employees also have power to ask for improving or maintaining the working conditions. The employer/firm characteristics refer to the size, the level of unionization and the knowledge of the statutory employment rights. Therefore, it is less likely that workers in small firms, firms with high level of collective bargaining and firms with a personnel specialist and/or HR sector will report adverse treatments at their workplace.
Personal characteristics of employees may also affect the level of precariousness of their workplace, because some of them like age, educational attainment and experience, are closely related with the productivity level (Kalleberg, 2009). According to Bewley and Forth (2010), younger workers with higher levels of education and working experience, are more productive and less susceptible to precarious employment. Young (2010) notes that women are usually employed in low-pay sectors, on a workplaces that have low responsibilities and have short-term employment contracts due to their caring obligations in the household. Also, women are more likely to have precarious jobs because they usually work in the low productivity sectors and are usually domestic workers. In addition, the workers traditionally disadvantaged on the labor market, like persons with disabilities, are more likely to be in precarious job (Fevre et al. 2016). According to Bocquier et al. (2010), the head of the household when faced with the need to feed the family, may have higher incentive to accept a precarious job. The same is applicable for workers from larger households with dependents.

2.3 PRECARIOUS EMPLOYMENT DURING THE COVID-19 CRISIS

The current literature emphasizes that during past economic crises, like the Global economic recession of 2008, the labor market was strongly affected. Along the increase in unemployment, they all brought increases in jobs of short-term nature, which were low-pay and which did not provide sufficient legal and social protection. Such employments represented a threat to some groups of workers who were already disadvantaged, like informal workers, those with temporary contracts, and low paid workers (Carls, 2012).
The crisis caused by the COVID-19 virus that started as health crisis but rapidly progressed into an economic and social crisis, has made significant shifts in the world of work. Although a global crisis, the impact on the labor markets and precariousness of jobs differs among regions and countries. According to the World Bank (2020), the burden inflicted by the crisis is larger in less developed countries where jobs have been already more precarious. The crisis brought to the surface the fragilities of the labor markets, as several groups of workers like informal, low-pay, young, women, self-employed and those with non-standard employment contracts

have been hit the hardest.

According to ILO/OECD (2020), the crisis has led to deterioration of labor market position of the least protected workers who have limited means, such as those engaged in the informal economy and those with atypical employment contracts. Workers, who work in essential sectors (health care, food, retail, electricity and water supply) and those who can perform their work from home, suffered less compared to workers from the non-essential sectors and workers who have a job that cannot be performed from home. The latter, are usually low-pay workers who experienced the sharpest decline in their income. Low earners were particularly hit hard because majority of the front-liners to COVID-19 (medical staff, cashiers, pharmacists, delivery workers, etc.) are low-pay, and because many of the non-essential sectors affected by the restrictive measures pay low wages.

Workers with non-standard working arrangements, such as those with temporary, seasonal and/or part-time employment contract have been the first to be discharged from their workplaces following the COVID-19 outbreak (ILO/OECD, 2020). The crisis caused by COVID-19 posed severe consequences for informal workers as most of them have been engaged in the most affected sectors like retail, hospitality, manufacturing, and because many of them worked for their own-account or in micro companies, which are usually more sensitive to economic shocks.

Around 850 million informal workers in the G20 countries are likely to be highly affected by the pandemic, losing 61% of their income (ILO/OECD, 2020). Informal workers from the Arab countries were disproportionally affected by the pandemic, facing high risk of income and job loss, mainly because they lacked means and capacities to cope with the pandemic (Kebede et al. 2020a,b,c). In Asia, the initial shock of the pandemic was most felt by the informal workers as nearly 40% lost their jobs in April 2020 while the others experience a massive decline in their earnings (Bussolo et al. 2020). According to UN Women (2020), informal workers from Asia and the Pacific experienced a 22% decline of their income.

Domestic workers are another group disproportionally affected by the COVID-19. ILO (2020a) estimates that 55 million domestic workers were significantly impacted by the pandemic, facing income and job loss due to the fear and restrictive measures limiting their mobility and access to the workplace. 74.6% of them are informal workers, meaning they lack social protection and right to unemployment benefits that further deteriorate their livelihoods. According to UN Women/ILO/ECLAC (2020), between 8 and 13 million domestic workers in Latin America and Caribbean experienced contract termination, working hours and pay reduction due to the pandemic. In Mexico, most of the 2.2 million domestic workers were fired and remained without compensation (WIEGO, 2020).

The crisis has also severely affected the low-pay workers. Those in elementary occupations lost more working hours compared to workers on managerial or professional positions. According to ILO (2020b), the lowest-paid 50 percent of

workers in 28 countries would have lost 17.3% of their wages without the temporary subsidies provided by governments. Due to the restrictive measures, low-pay workers in the US faced massive job and income losses (Kinder and Ross, 2020). In the UK, every third low-pay worker is in the sectors that were closed during the pandemic, experiencing also heightened worries about their finances (Learning and Work Institute, 2020). According to Lund et al. (2020), low-pay workers should also worry about their workplaces because 100 million of them may face job-vanishing by 2030. The pandemic showed that many low-pay jobs, especially in developed countries, may be automatized, which will lead to many job losses.

METHODOLOGY AND DATA

The objective of the study is two-fold: first, to portray the socio-economic impact of the pandemic on five groups of precarious workers in North Macedonia; and second, to investigate how and to what extent workers' characteristics explain the probability of being in a precarious employment, with a comparative overview of before versus during the crisis. To fulfil the first objective, we are using descriptive statistical analysis of microdata provided by the State Statistical Office of North Macedonia. For the second objective, we construct a precariousness index and employ an econometric model to estimate the relationship between the probability to be in a precarious employment and the personal and households' characteristics of the worker.

3.1 ANALYSIS OF MICRODATA FROM THE LABOR FORCE SURVEY

We use data from the Labor Force Survey for the second and third quarter of 2019 and 2020 – a total of four quarters, so the comparative figures are at annual level: pandemic period (second and third quarter of 2020) in relation to the pre-pandemic period (second and third quarter of 2019). We observe a wide span of indicators for the two defined sub-periods, in order to describe the circumstances and precariousness of the five groups of workers, defined through the following indicators:

1. The low pay indicator is the only monetary and takes value 1 if the worker receives a wage below 2/3 of the median wage; and 0 otherwise.
2. The unpaid workers are considered precarious because they may be hidden unemployed with no access to social protection and salaries. Therefore, if a worker's economic status is unpaid family worker, the indicator equals to 1; and 0 if he/she is an employer, employee or own-account worker.
3. The adverse working conditions are expressed through the place and premises where the worker performs his/her job or through the fact that a work is performed for one or more households from another location. If the job is performed at workers' home, at employers' home, or belongs to one of the following occupations: domestic housekeepers, child-care workers, home-based personal care-workers, or domestic cleaners and helpers, the indicator takes a value of 1, and 0 otherwise.
4. The fourth indicator is related to the type of the employment contract and reflects the contractual insecurity. It takes a value 1 if the worker has informal employment contract or if he/she works in an unregistered entity; and 0 otherwise.
5. Working part-time job is a signal of precarious employment, except in case of voluntary agreement due to illness, education and/

or family obligations. Hence, the fifth indicator refers to the contract and work-time duration and is equal to 1 if the worker has a temporary, fixed-term contract or he/she works part-time due to lack of full-time job; and 0 if he/she is in permanent employment and or is in voluntary part-time employment or has a full-time job.

It should be noted that the five groups of workers defined through these indicators are not mutually exclusive. According to Table 1 a total of 307,190 workers (pre-pandemic) are subject to our analysis, which implies that 38.5% of all employed in North Macedonia belong to at least one of the above defined groups of workers and could be considered as precarious.

Table 1 suggests that 45.5% of low-pay workers possess at least a second precarious characteristic: of them 26.2% are informal, 17.7% are with an atypical contract and 1.6% are domestic workers. A sheer majority of unpaid domestic workers are also informal (92.5%), while three fourth of paid domestic workers have at least another precarious characteristic: most of them (35%) are informal. 90.6% of informal workers have at least a second precarious characteristic distributed along low pay (27.7%), unpaid family work (29.9%) and atypical contract (29.8%). While, a third of workers with atypical contract are informal, yet another 21.1% are low-pay. This implies that precariousness compounds in workers, an issue we revert to in Section 5, while in the descriptive section, we observe each group separately, ignoring the accumulation of the vulnerabilities. Namely, each sub-group of workers is disaggregated by sector and occupation, by status in employment, type and formality of the employment relationship, and number of employees of the enterprise they work with. Then, we disentangle the pandemic effect for each workers' group by observing the changes in four key indicators: hours worked, number of workers with lower working hours than usual, wage income lost and average wage changes; and we

Table 1: Cross-tabulation of the five groups of precarious workers

	Low-pay workers	Unpaid family workers	Domestic paid workers	Informal workers	Workers with atypical contracts
Low-pay workers		0.0%	18.8%	27.7%	21.1%
Unpaid family workers	0.0%		0.0%	29.9%	0.4%
Domestic paid workers	1.6%	0.0%		3.2%	2.3%
Informal workers	26.2%	92.5%	35.0%		33.6%
Workers with atypical contracts	17.7%	1.1%	21.7%	29.8%	
TOTAL (% with at least a second precarious characteristic)	45.5%	93.6%	75.5%	90.6%	57.4%

Source: LFS

compare such changes with those of the overall employed population. Finally, we pay particular attention to the loss of working hours and wage income by age, sex and educational attainment to identify those further precarious within the five sub-groups.

3.2 CONSTRUCTION OF A PRECARIOUSNESS INDEX

Measuring precarious work is a complex task since it is not a pure statistical category but consists of many characteristics of the workplace and the employment relation. As mentioned in section 2, precarious work usually refers to informal, atypical working arrangements that are poor paid, non-protected and/or low-unionized. These aspects, upgraded by a few more characteristics of the workplace that make the employment less stable, secure and decent, are the basis for our measurement of the precariousness of jobs. Certainly, this is not the only way to measure the precariousness of the work, but it is in line with the research conducted by other economists (Kalleberg, 2012; Bocquier et al. 2010; Tompa et al. 2007). Our approach uses 11 indicators that describe the multifaceted precariousness of the jobs, of which the first five are the basic ones to this analysis, already explained in Section 3.1. For the index, we consider the atypical working arrangements as separate: one relating to contract duration (1 = temporary, fixed-term duration) and the other to work-time duration (1 = involuntary part-time work). To these, we add:

6. The sixth indicator is related to the day and time of the job execution. Working at night or during weekend is not precarious by itself, but if a worker performs an evening work during Saturday or Sunday, then jobs' stability may be at stake. This indicator equals to 1 if at least two of the following prevail: work in shifts, at night, in the evening, on Saturday, on Sunday; and 0 otherwise.
7. The seventh indicator taken into account for measuring precarious employment is related to underemployment. A worker is underemployed if he/she works less than 35 hours per week and would like to work more. In such case, the indicator equals to 1, and 0 otherwise.
8. Having second additional job may signal that the main job is instable and precarious or that the worker is underemployed. Therefore, the additional job variable is equal to 1 if the worker conducts an additional job, and 0 otherwise.
9. The ninth variable reflects the dynamic facet of the precariousness and refers to the employment duration at the current work. It equals to 1 if the worker is in the same job for less than 5 years, and 0 otherwise.
10. The last indicator refers to the skills mismatch and it is defined in the following manner. For each 2-digit ISCO occupational group in each of the two sub-periods, the mean of educational categories

of workers as well as their standard deviation is measured. Then the over- (under-) educated are respondents who have education years above (below) the mean level by one standard deviation. They are assigned a value of 1; and 0 otherwise.

Eventually, for each worker we define a precarious index as a sum of all eleven indicators where the precariousness of job ranges between 0 (lowest precariousness) and 11 (highest precariousness). The real values obtained in our analysis is from 0 to 7, implying that there is no worker whose job is precarious in more than 7 of the 11 aspects of precariousness.

3. 3 THE MODEL

In the next step, we establish a relationship between the precariousness index and the personal characteristics of the worker. Since our dependent variable, the precariousness of the job, is an ordered variable with eleven outcomes, we apply an ordered probit model which takes the following main form:

$$y^*_i = x_i\beta + u_i$$

where y is the exact but unobserved dependent variable, x_i is a vector of the independent variables and β is the central coefficient that reflects the strength of the relationship between the dependent and independent variables. The ordered variable yi takes values from 0 to N according the following template:

$$y_i = j \text{ if } \alpha_{j-1} < y^*_i \leq \alpha_j$$

The probability that observation i will select the alternative j is

$$P_{ij} = p(y_i=j) = p(\alpha_{j-1} < y^*_i < \alpha_j) = F(\alpha_j - x_i\beta) - F(\alpha_j - 1 - x_i\beta)$$

Hence, the ordered probit model with j alternatives will have one set of coefficients with $(j-1)$ intercepts and j sets of marginal effect. The marginal effect of an increase in the independent variable on the probability of selecting the j alternative is:

$$\delta p_{ij}/\delta x_{ri} = \{F'(\alpha_j - 1 - x_i\beta) - F'(\alpha_j - x_i\beta)\}\beta_r$$

The estimation of the predicted probabilities and marginal effects is widely used today, and details can be found, for example, in Greene (2012). Hence, we estimate ordered probit model together with the marginal effects and the predicted probability for a worker to have a job not precarious at all (a value of 0) to highly precarious (a value of 11). Hence, the model is presented through the following equation:

$$P(\text{precarious employment}) = \alpha_1 + \beta_1 sex_i + \beta_2 age_i + \beta_3 education_i + \beta_4 marital_i + \beta_5 hh\_position + \beta_6 hh\_size_i + \beta_7 child_i + \beta_8 elderly_i + \varepsilon_i$$

where the probability of precariousness of the job theoretically ranges from 0 to 11 and depends on the personal characteristics of the worker (sex, age, level of education, marital status and his/her position at the household) and the characteristics of his/her household (the size of the household and the shares of children and elderly).

PRECARIOUS WORKERS DURING COVID-19 IN NORTH MACEDONIA

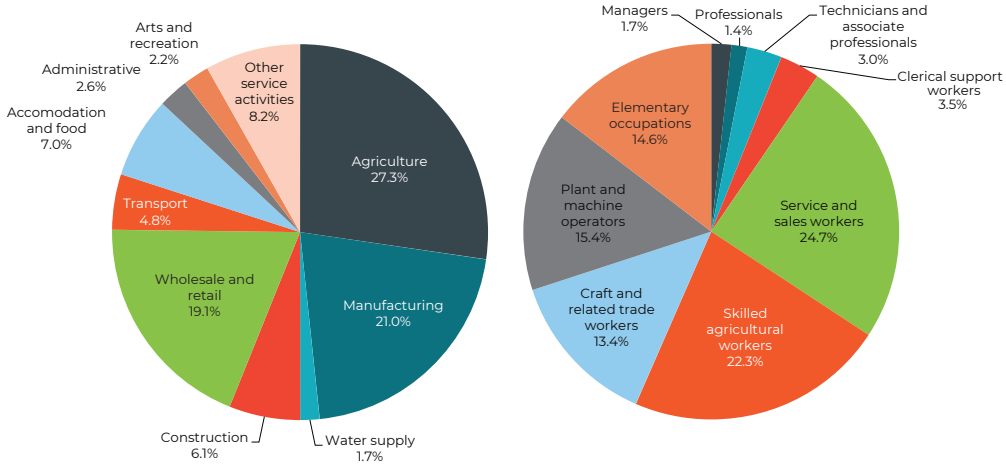
4.1 LOW-PAY WORKERS

Low-pay workers are defined as those who earned below two-thirds of the national median wage.

Precariousness of the low-pay work

Before the pandemic, more than 140 thousand workers were paid low. Figure 1 (left) shows that most of them were engaged in the agriculture sector (27.3%), manufacturing (21%), wholesale and retail (19.1%), accommodation and food (7%) and construction (6.1%), the sectors that were strongly affected by the pandemic according to ILO/EBRD (2020). They are usually engaged in low-skill occupations which, according to ILO (2020c), lost more working hours than managers, professionals and the other high-skill occupations (Figure 1, right).

Figure 1: Low-pay workers by sector and occupation



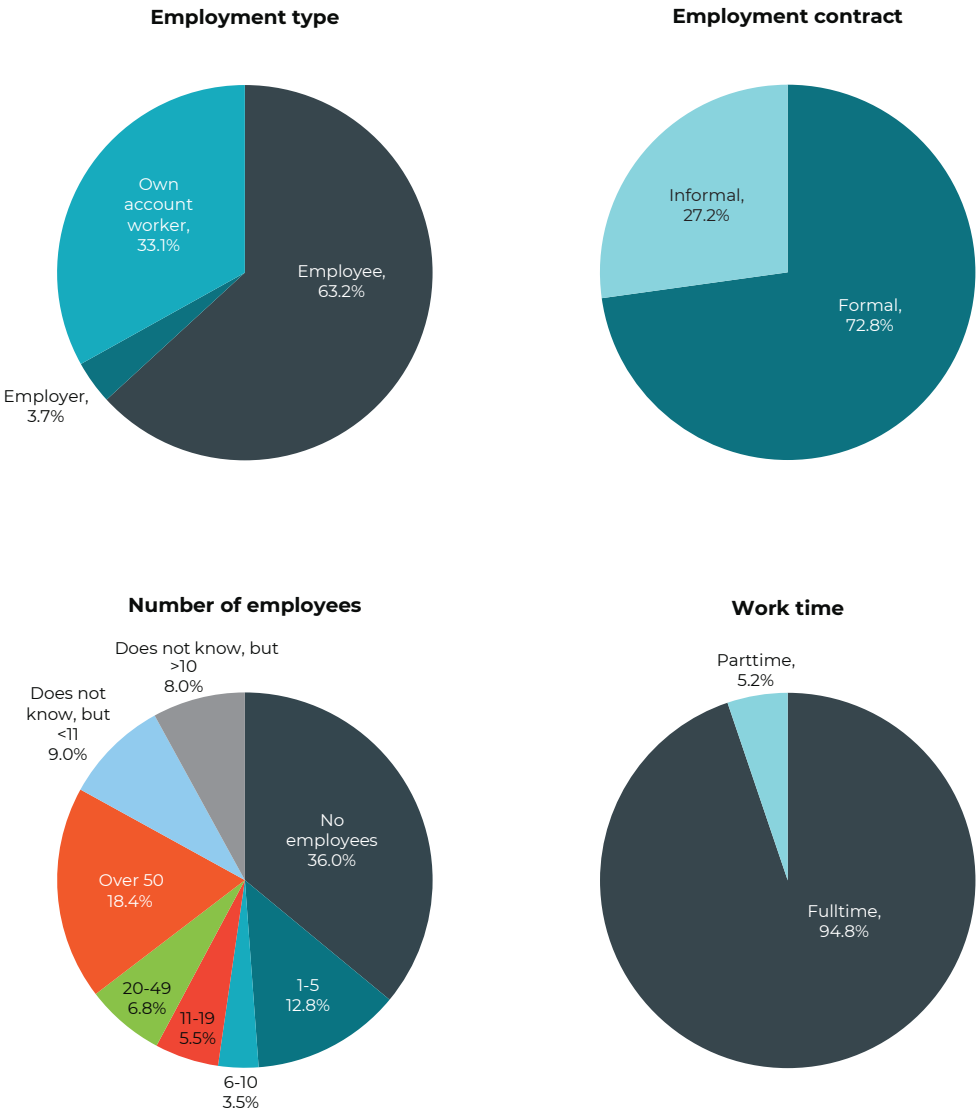
Source: LFS

Note: The share of workers in the sectors that are not shown on the figure is less than 1% and are presented in the Other service activities.

Other key characteristics analyzed in Figure 2 reveal that low-pay workers are in precarious employment which makes them more sensitive to the pandemic shock. A third of them are own-account workers (Figure 2, upper left), while half work in a micro company (up to 10 workers) (Figure 2, lower left).

Every fourth low-pay worker does not have an employment contract or works in an unregistered business, thus is not covered by the job-retention measures provided by the government and can be easily fired in case of work rationing (Figure 2, upper right).

Figure 2: Characteristics of the low-pay workers



Source: LFS

Losses during pandemic

Nearly 54 thousand low-pay jobs have been put out during the pandemic, which is nearly 40% of all low-pay jobs (Table 2). However, not so many low-paid workers lost their job. Large share of the reduction of the low-pay jobs could be attributed to two key developments: 1) the minimum wage increased in October 2019 - from 12.507 MKD in the period before the pandemic, to 14.500 MKD in the period during the pandemic (and further to 14.932 MKD in June 2020); and 2) the government introduced a subsidy of social contributions for a wage increase between 600 and 6,000 MKD in November 2019 for a maximum duration of 3 years. Both wage increases supported by these government policies resulted in wage hikes predominantly in the left part of the wage distribution, which reflected in the notion that the median wage did not change over 2020 because of these shifts. Hence, in Table 2 we observe that the loss of 54 thousand low-pay jobs was largely compensated with an increase of jobs which are either above the low-pay threshold or belong to the categories of unpaid workers (e.g. unpaid family workers). Still, it is very likely that the net loss of 7,427 jobs is mostly among the low-paid workers, also supported by the following: 1) large share of jobs losses is domestic workers who are predominantly low-paid (see section 4.3); 2) unpaid workers (a total of 28.433, of which 8.277 unpaid family workers) prevalently have been formalizing their jobs within the small agricultural holdings as a vehicle to get qualified for the government support (see section 4.2).

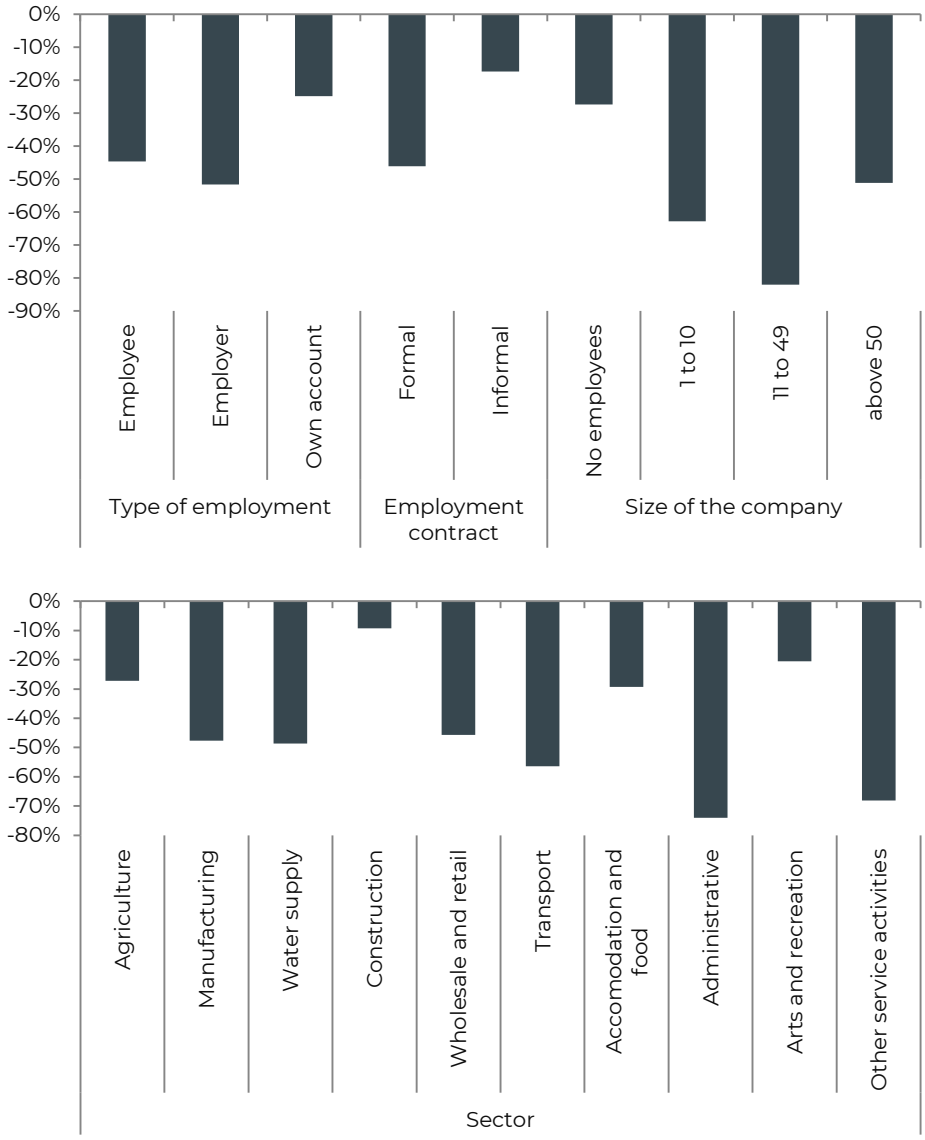
Table 2: Changes in the number of low-pay jobs

	Low-pay workers	Rest (non-low-pay and no-pay workers)	TOTAL
Before the pandemic		0.0%	18.8%
During pandemic	0.0%		0.0%
Change	-53,929	+46,502	-7,427
	-38.3%	+7.1%	-0.9%

Source: LFS

Figure 3 suggests that the share of low-pay jobs that were put out during pandemic is higher among employers and employees, formal workers and workers from medium-sized companies. This share is the highest in the sectors that have not been hit the hardest, like manufacturing, water supply and administrative sector. Both observations are aligned with the notion that large share of low-paid workers actually transferred onto a job above the low-pay threshold.

Figure 3: Rates of low-pay jobs lost, by few characteristics



Source: LFS

Low-paid workers experienced severer declines in two labor market outcomes compared to all workers (Table 3)[1]. The number of workers with lower working hours than usual nearly doubled (95%), though is lower than among all workers (155%). The lower increase of workers with lower hours than usual when compared to all employed is probably due to the fact that nearly 30% of the low-pay workers are agricultural workers who were not strongly affected by the restrictive movement measures, thus continued to perform their job as usual to a considerable extent.

Table 3: Labor-market losses among low-pay workers

	Low-pay workers	All workers
Workers with lower working hours than usual	95%	155.8%
Mean wage	-2.4%	6.3%

Source: LFS

Pandemic's impact on low-pay workers according to age, sex and educational attainment is shown in Figure 4. Older workers (50-64) and workers with tertiary education have been most shielded in terms of both working hours and income losses. The other two age groups have been almost equally affected, experiencing a loss of around 50% of the working hours and 40% of income. However, the relatively equal distribution of the losses across the categories justifies that the transferring of low-pay workers towards higher-pay jobs has been fairly uniformly distributed.

[1]The other two outcomes: working hours and wage mass losses are not shown because they are strongly determined by a large part of such workers transferring to a non-low-pay category.

Figure 4: Working hours and income losses, by few personal characteristics of low-pay workers

Source: LFS

Policy space

The finding that all jobs lost during the pandemic are likely to have been low-paid is worrying. To protect jobs losses during the pandemic, the government instituted a wage subsidy at the minimum wage level during the pandemic. Providing a wage support with a reemployment subsidy to safeguard jobs that were lost during the pandemic, may increase the incentive for low-paid workers to faster return in the labor market. Expanding the unemployment benefit through larger scope and longer duration is another way to provide financial and social relief among those who lost their jobs during the pandemic.

For those who permanently lost their low-pay job, actions for increasing their skills and knowledge for gaining access to a higher-pay job are necessary. Promotion of the palette of existing active labor market measures may alleviate scarring among workers who lost their jobs and keep them in an active search for a job.

As many low-paid workers are engaged in the labor-intensive sectors, like textile, and continued to work during the pandemic, supplying with necessary information and/or prioritization in vaccination is indispensable to maintain their health and jobs.

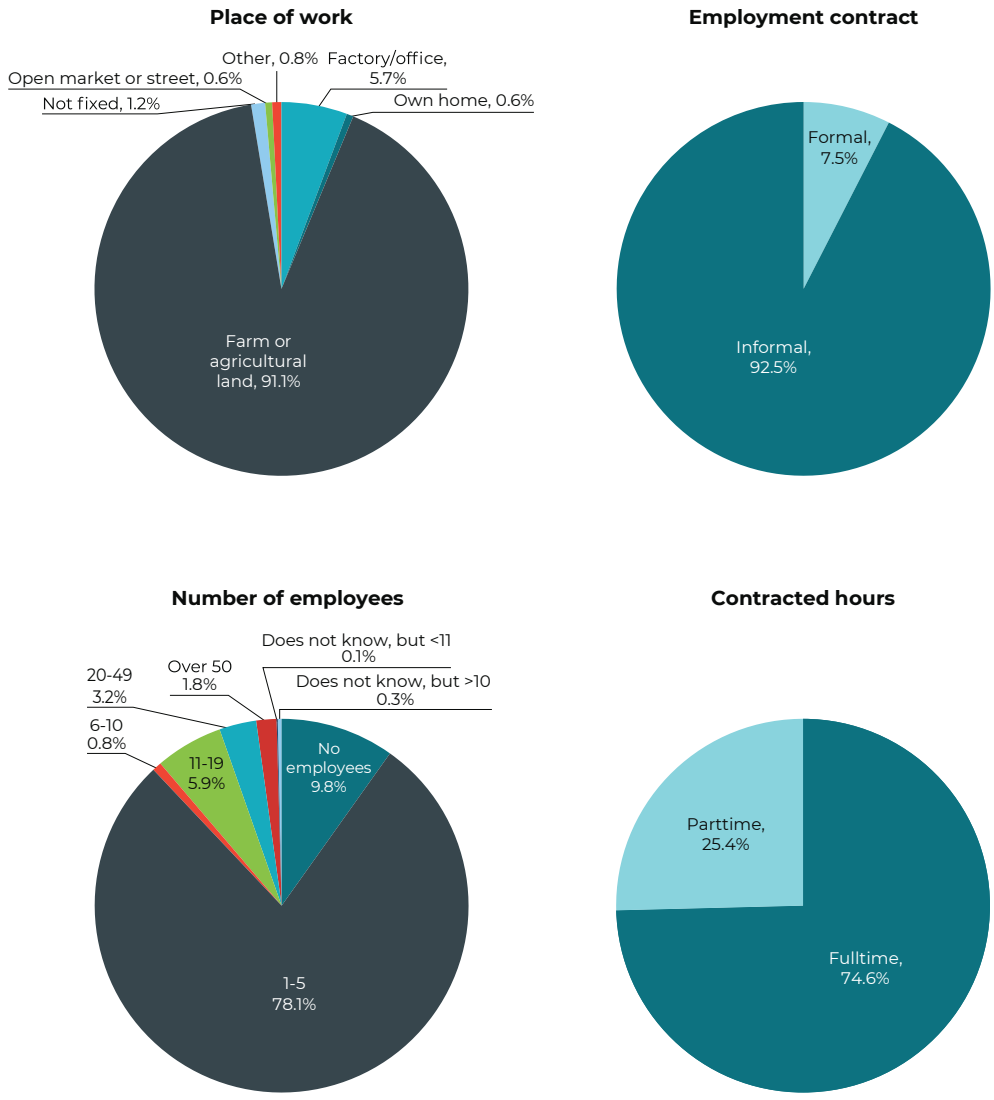
4.2 UNPAID FAMILY WORKERS

Unpaid family work is a kind of labor that supports production for sales, is not remunerated but the compensation may be felt through the family income, fringe benefits and/or payment in kind. Unpaid family workers are usually members of producers' cooperatives or contributing family members.

Precariousness of the unpaid family work

More than 43 thousand workers in North Macedonia have been unpaid family workers in 2019. They are usually agricultural workers who perform their job at a farm or on an agricultural land (Figure 5, upper left). Regarding the employment type of unpaid family workers, 92.5% are informal, suggesting that they have had no employment contract or that work in an unregistered business (Figure 5, upper right). Hence, they have had no access to the available measures for job retention during the pandemic and could have been easily fired. Almost 80% of these workers are employed in micro firms (1-5 employees) (Figure 5, lower left).

Figure 5: Characteristics of the unpaid family workers



Source: LFS

Losses during pandemic

More than 8 thousand unpaid family workers or 19.2% of all unpaid family jobs were put out during the pandemic (Table 4). Since the increase of number of jobs among the rest is negligible (0.1%), one may conclude that such unpaid family jobs were lost. However, this would contradict with the conclusion that the net loss of 7,427 jobs was primarily low-pay (see Section 4.3.1). Hence, we need to delve deeper to understand what happens by observing the development of the other three working statuses during the pandemic.

The number of wage employees increased by almost 20 thousand, the number of employers stayed the same, the number of own account workers declined by almost 20 thousand, while the number of unpaid family workers declined by 8 thousand. The net loss of 7,427 jobs is unlikely to have been driven by losses of unpaid family jobs. The conclusion that mostly low-pay jobs were lost is corroborated by the fact that a large share of own-account jobs was lost (19.5%). The latter is aligned with the evidence that micro subsistence businesses suffered most during the crisis[2], including with early attempts by the government to exclude from the employment-retention measures owners employed in their own micro-ventures. The latter is also aligned with production in the agricultural sector which in 2020 declined by 1.8%, while the overall economy by 4.5%. Therefore, the loss of unpaid family jobs is to a large extent a transformation into employees to get qualified for the government employment-retention measures.

Table 4: Changes in the number of unpaid family workers

	Unpaid family workers	Rest (paid and other unpaid workers)	TOTAL
Before the pandemic	43,016	753,899	796,915
During pandemic	34,739	754,749	754,749
Change	-8,277	+850	-7,427
	-19.2%	+0.1%	-0.9%

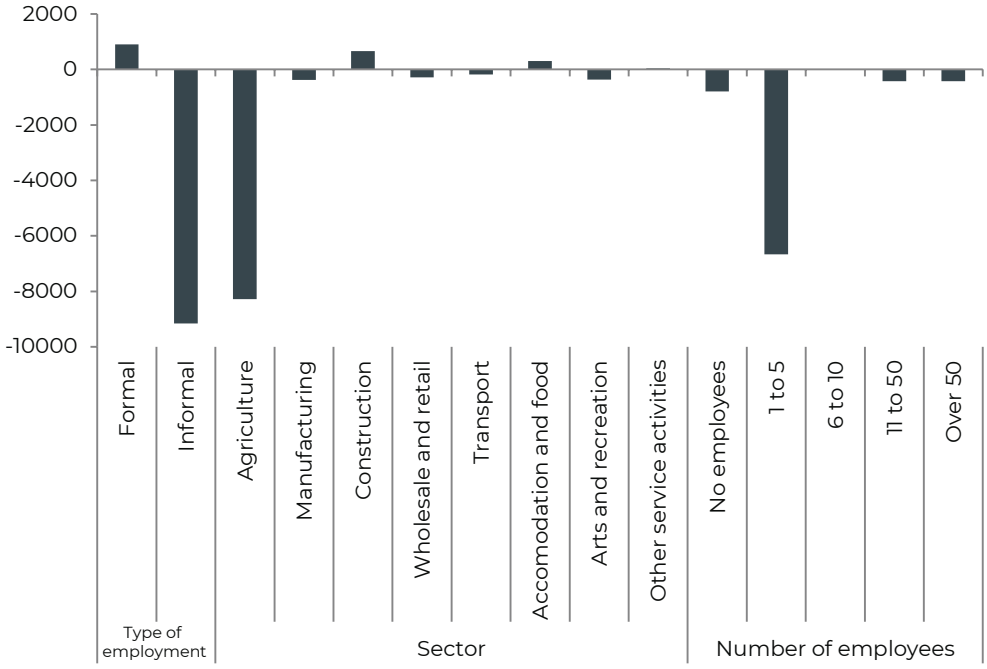
Source: LFS

[2] https://www.financethink.mk/wp-content/uploads/2020/11/QLife_No.3-EN-1.pdf

Figure 6 reveals that most of the put out unpaid family jobs were informal, in agriculture and in micro-enterprises, which is a reflection of their structure. However, it also indirectly suggests that these workers likely formalized through concluding an atypical contract within their small agricultural holding to qualify for the employment retention measures (see Section 4.5).

The number of unpaid workers with lower volume of working hours than usual increased by 18.3%, which is less than the number of all workers (Table 5)[3]. Given that most of the unpaid family workers are agricultural workers who were not covered by the restrictive movement measures during the lockdown, this result is not surprising.

Figure 6: Number of unpaid family jobs put out, by few characteristics



Source: LFS

[3]The other outcome available for unpaid family workers: working hours, is not shown because it is strongly determined by a large part of such workers formalizing in a paid job to get qualified for the government measures.

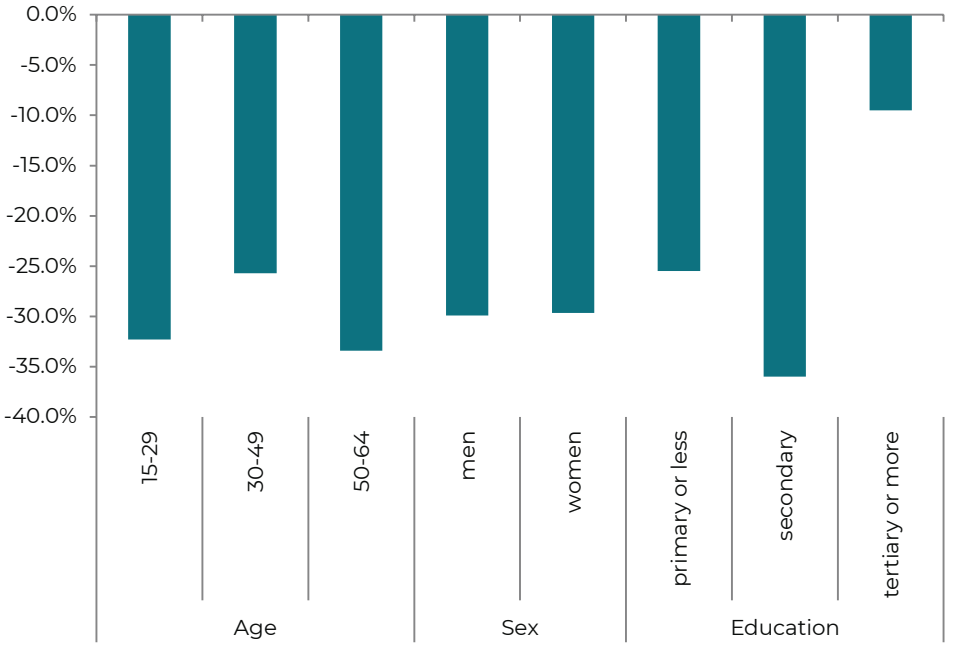
Table 5: Labor-market losses among unpaid family workers

	Unpaid family workers	All workers
Workers with lower working hours than usual	18.3%	155.8%

Source: LFS

Figure 7 reveals that there are no significant differences in the impact of the pandemic between different age and gender groups among the unpaid family workers. Working hours of both men and women, young and older unpaid family workers, were almost equally affected. A significant difference appears among the tertiary-educated unpaid workers, who experienced smaller loss. However, the relative equality of the impact corroborates that the likely transformation of the unpaid family workers into paid workers to benefit from the government measures followed fairly equal distribution among the observed categories.

Figure 7: Working hours loss, by few personal characteristics of unpaid family workers



Source: LFS

Policy space

The finding that unpaid family jobs were not lost but rather transformed into formal agreements to make them eligible for the employment-retention measures of the government is a momentum to be sustained. As unpaid family workers are predominantly nested in agriculture, the government may introduce incentives to prevent these workers to retract back into informality.

Along these lines, in September 2020, Finance Think prepared a Brochure with measures for financial support of female farmers, which presents the measures available to agricultural workers and their agricultural holdings, most of which were available in the pre-crisis period. It is necessary for the line ministry to consider increasing the scope of these measures by possibly relaxing / revising some of the criteria, as well as designing accompanying measures that would further support the income of the recipients during and post Covid-19 crisis.

Likewise, increasing the awareness of farmers about the available programs and measures to support agriculture, through personal visits, distribution of printed materials, opening information corners, especially in rural areas where awareness is extremely low, will facilitate greater utilization of available measures that support formalization, which in the post-Covid-19 situation may be indispensable for preventing a set-back in the small formalization gain achieved during the pandemic.

4.3 PAID DOMESTIC WORKERS

According to ILO's Domestic workers convention,[4] domestic work refers to a job that is performed in or for one or more households, within an employment relationship. To identify the domestic workers in the Labor Force Survey, we use the task-based approach and the International Standard Classification of Occupations (ISCO-08) where the unit groups with typical domestic tasks are the following:

5152: Domestic housekeepers

5311: Child-care workers

5322: Home-based personal care-workers

9111: Domestic cleaners and helpers.

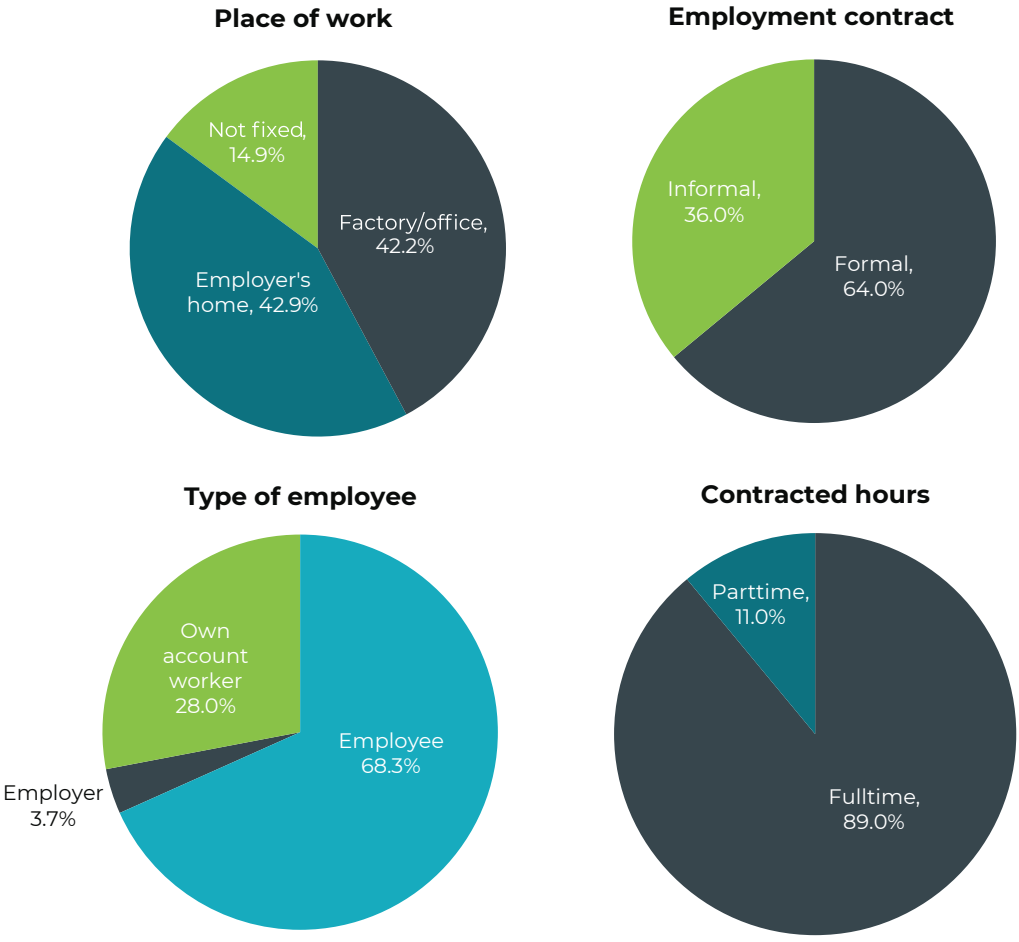
In addition, we include all workers who reported that they perform their job at the employer's home, irrespective of whether they belong to these or other occupations. As a second step, we estimate the socio-economic impact of the pandemic only for the workers from these unit groups who performed their job exclusively at the employer's home, which are usually domestic housekeepers and child-care workers.

[4]C189 Domestic Workers Convention, 2011 (No. 189)

Precariousness of the paid domestic work

Domestic workers in North Macedonia are usually in precarious employment according to several characteristics (Figure 8), which make them highly sensitive to the pandemic shock. Namely, 42.9% and 14.9% of them work in the employer's home or do not have fixed workplace, respectively (Figure 8, upper left). This makes them less visible for the labor inspectorates and short of access to collective barraging, therefore, their workers' rights are usually subject to violation. Around 36% of paid domestic workers are informal, inter alia implying they have had no access to any government measure for jobs retention provided as a shield during the pandemic (Figure 8, upper right). Almost a third of them work for own account, usually do not use accountant's services and have no skills and knowledge to apply for the available measures even if they were formalized (Figure 8, bottom left).

Figure 8: Characteristics of the paid domestic workers



Source: LFS

Domestic paid workers who solely perform their job at the employer's home are even more precarious, since 70.5% of them have not a formal employment contract. Also, they are at an elevated risk of exposure to Covid-19 due to the physical proximity to the household (e.g. a nanny), usage of public transportation to reach the workplace or due to shifting work among multiple households (e.g. a house cleaner).

Losses during pandemic

Table 6 shows that 2.702 domestic workers or 21.9% lost their job during the pandemic. This is 36.4% of all jobs lost during the pandemic, indicating that this category of workers suffered a lot. The number of lost jobs among those who performed their job exclusively in the employer's home is 381, which is 86.9%, suggesting that they have been hardest hit by the pandemic in relative terms. This resonates the earlier finding (see Section 4.1) that the lost jobs during the pandemic were predominantly low-pay; domestic paid workers are usually nested in the lower end of the wage distribution.

Table 6: Changes in the number of paid domestic workers

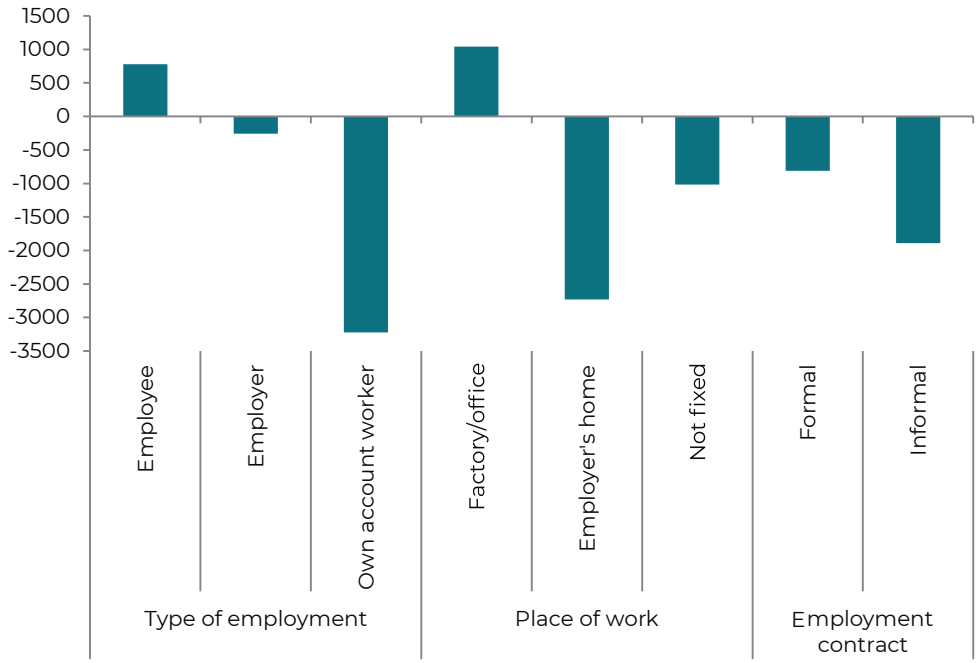
	All domestic workers	Of which: Domestic workers who work exclusively in employer's home	Rest (non-domestic workers)	TOTAL
Before the pandemic	12,353	438	784,562	796,915
During pandemic	9,651	57	779,838	754,749
Change	-2,702	-381	-4,724	-7,427
	-21.9%	-86.9%	-0.6%	0.9%

Source: LFS

Figure 9 reveals that the number of jobs lost is the highest among domestic own-account workers, workers who perform their job at the employer's home and workers who do not have a permanent workplace and those without employment contract.

of paid domestic workers. Restrictive mobility measures may have also prevented this category of workers from reaching the workplace and/or working with normal working hours. Paid domestic workers lost 18.1% of the income they earned before the crisis, while the average wage

Figure 9: Number of domestic paid jobs lost, by few characteristics



Source: LFS

Table 7 shows that paid domestic workers lost 57.1% of the volume of hours worked before the pandemic, which is almost triple the volume lost among all workers (16.6%). The number of workers with lower working hours than usual increased six-fold (503.7%), triple that of all workers. The release of parents of children up to the age of 10 from work and the possibility of taking care of their children and home on their own, is the likely reason for the reduced number of working hours

increased, potentially suggesting that those who were losing jobs were among the lowest paid, notwithstanding the fact that paid domestic workers are generally at the lower end of the wage distribution.

The losses of paid domestic workers who performed their job exclusively in employer's home, usually as cleaners or careers for children and elderly, are even further devastating (Table 7). They lost 93% of the actual hours worked before the pandemic,

which is almost six times more than all workers. The fear among employers that the employee may bring the virus in his/her home, or isolation of the worker/household due to infection or contact with the virus, is also a plausible reason for the high share of working hours lost. The parental release from work may have been particularly important among this subset of paid domestic workers. The decreased average wage of these workers by 45.8%, combined with the amount of jobs lost, led to a 91.2% loss of the income they earned before the pandemic.

Women have been more affected by the loss of working hours, but men lost more of their income. The loss of working hours has been largest among the highly educated domestic workers, but not very different from those with primary and secondary education. However, highly educated domestic workers fared better compared to the other groups, potentially suggesting that while their working hours reduced, they continued to be paid by the employer-household.

Table 7: Labor-market losses among paid domestic workers

	Change during the pandemic		
	All domestic workers	Domestic workers who work at the employer's home	All workers
Actual hours worked	-57.1%	-93.0%	-16.6%
Workers with lower working hours than usual	503.7%	91.1%	155.8%
Income lost	-18.1%	-91.2%	9.4%
Average wage	4.9%	-45.8%	6.3%

Source: LFS

Most working hours have been lost among young domestic paid workers (15-29), albeit losses are significant in the other two age groups (Figure 10). Surprisingly, the age group 50-64 fared best, both in terms of working hours and income; they even recorded an increase of the income during the pandemic, which may be due to the higher experience and loyalty to the household they worked for and/or the additional responsibilities designated by the household due to the pandemic, like more thorough and more frequent cleaning and disinfection of the home.

Figure 10: Working hours loss, by few personal characteristics of paid domestic workers

Source: LFS

Policy space

Due to the prevalent informality of paid domestic workers and the low skills and knowledge needed for application for the government measures among the formal domestic workers, the government measures, primarily the "14.500 MKD per employee" and the one for subsidizing 50% of social contribution, could not have been used by the paid domestic workers. Nevertheless, paid domestic workers need protection equivalent to that given to the other workers. Many countries extended the unemployment benefits to paid domestic workers, either by making them eligible or by enabling a quick entry and a prolonged period when benefits may be received. Yet again, this measure generally applied to domestic workers in formal employment only.

To protect informal domestic workers, some countries extended social protection coverage, providing cash assistance to all domestic workers, in addition to their salary. The informal paid domestic workers in North Macedonia may have become eligible for the guaranteed minimum assistance and the one-time cash transfers. However, there are no available data on the share of these funds received by paid domestic workers. Along that line, introducing a temporary basic income as a form of social protection of people with livelihoods below a vulnerability-to-poverty threshold, for covering the essential needs in a period of 6 months, may provide a suitable social protection for all domestic workers who lost their jobs during pandemic (see more in Petreski et al. 2020).

Providing a subsidy to the households as employers, to help them pay the domestic worker who cannot work due to the restrictive measures is a kind of job-retention measure implemented in Spain, for example. It may be tied with a requirement to formalize the employment relationship and keep it formal for at least certain period of time once the subsidy elapses.

In that regard, regulation of the domestic work and most important, its formalization is key. Effective access to social protection, equal labor and social rights for the paid domestic workers and compliance with the labor law are some of the measures that could regulate the domestic work. To support formalization of the childcare domestic work, for example, a childcare voucher scheme may be established, when the parents 'sacrifice' part of their salary to buy childcare vouchers, without paying taxes and contributions for that part of the salary. Namely, each employed parent can pay a defined sum per month/year of their salary into their childcare voucher account and use it to pay for registered childcare provider. They will not pay taxes and/or contributions on that amount, resulting in significant de-facto savings. On top, the possibility to use it only for hiring registered childcare providers will result in formalization of many currently informal jobs.

4.4 INFORMAL WORKERS

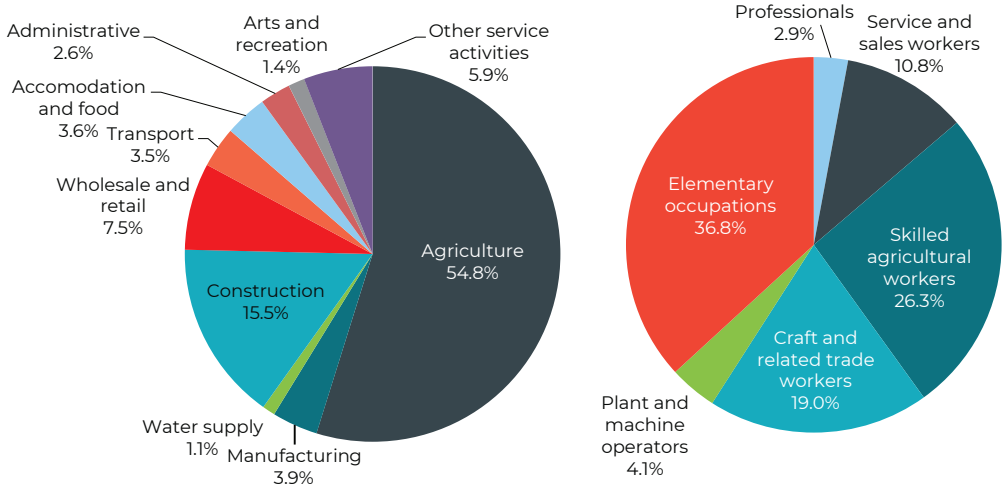
Informal workers are those who do not have written employment contract or who work in an unregistered business. Therefore, they lack job and social security, they are usually low-pay, less protected and more sensitive to economic shocks.

Precariousness of the informal workers

In 2019, 17.5% of the total employment or nearly 134 thousand workers in North Macedonia were informally employed. More than half of them are engaged in the agricultural sector (54.8%), while the share of informal workers in the construction and wholesale and retail sector is also significant (Figure 11, left). Their occupation is usually low-skilled, since the share of informal workers with managerial and professional positions is less than 3% (Figure 11, right).

Informal workers are precarious according to economic status, place of work and size of the company they work for. Namely, 38% of them are own-account workers who, according to ILO/EBRD (2020) were hard hit by the pandemic (Figure 12, upper left). A third of them works in a micro company with up to 5 employees (Figure 12, upper right). More than half works at a farm or on an agricultural land (Figure 12, lower left) which is in accordance with their sectoral distribution.

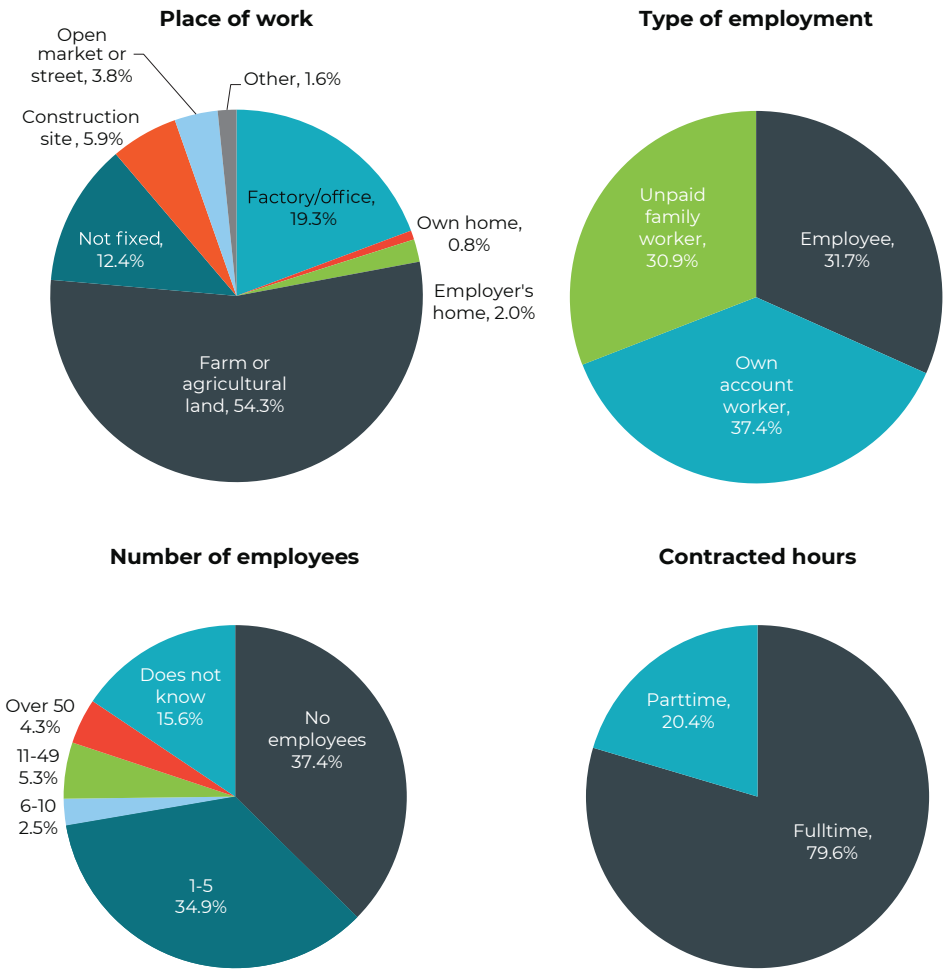
Figure 11: Informal workers by sector and occupation



Source: LFS

Note: The share of workers in the sectors and occupations that are not shown on the figure is less than 1%.

Figure 12: Characteristics of the informal workers



Source: LFS

Losses during pandemic

Nearly 23 thousand informal jobs or 17% have been put out during the pandemic (Table 8). The number of informal jobs that died out is large, but the increase among the formal jobs by more than 14 thousand suggests that it is likely that 2/3 of the losses were actually formalized jobs. What we observe as a net loss of 7,427 jobs is mainly informal jobs lost. This is aligned with the earlier findings that: first, a predominant share, if not all, of the job loss during the pandemic have been low-pay (see Section 4.1); second, a large share of the unpaid family jobs were formalized within their agricultural holdings in order to get qualified for the government support (see Section 4.2); and third, a part of the job loss have been observed among domestic paid workers, which are usually informal (see Section 4.3).

Table 8: Changes in the number of informal jobs

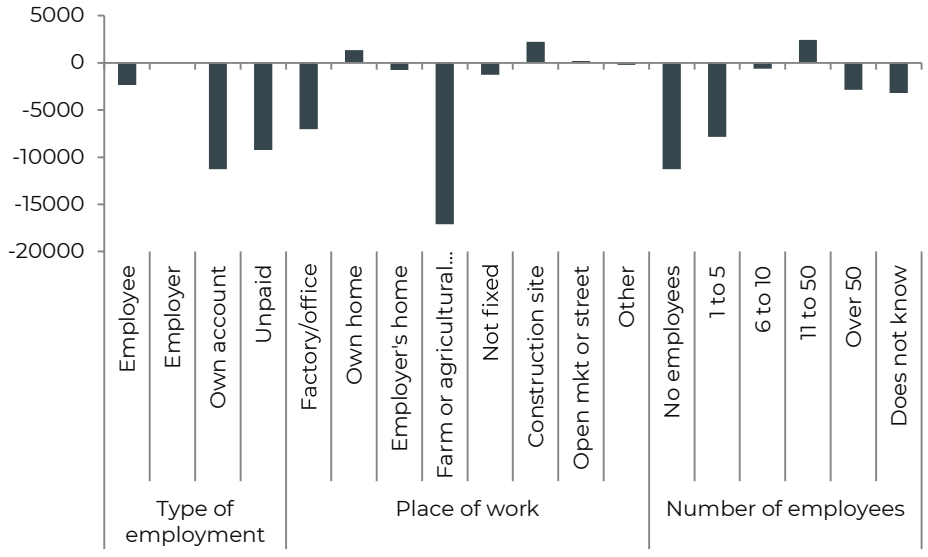
	Informal workers	Rest (formal workers	TOTAL
Before the pandemic	133,200	667,290	796,915
During pandemic	110,472	681,689	754,749
Change	-22,728	+14,399	-7,427
	-17.1%	+2.2%	-0.9%

Source: LFS

Figure 13 shows that most of the informal jobs lost were among own-account and unpaid family workers, as well among those working on agricultural land with no or small number of hired workers. This potentially corroborates our earlier observation that formalization was strongly prevalent among the unpaid family workers in agriculture, while actual losses were observed among own-account workers associated with factory/office-type of work.

The number of workers with lower working hours than usual grew by 151.5% among informal workers, almost the same as for all workers (Table 9).[5] Due to the apparent formalization (transfer to other category), informal workers recorded an income loss of 12.5%, while their average wage slightly declined.

Figure 13: Number of informal jobs lost, by few characteristics



Source: LFS

[4]The other two outcomes: working hours and wage mass losses are not shown because they are strongly determined by a large part of such workers transferring to a formal job.

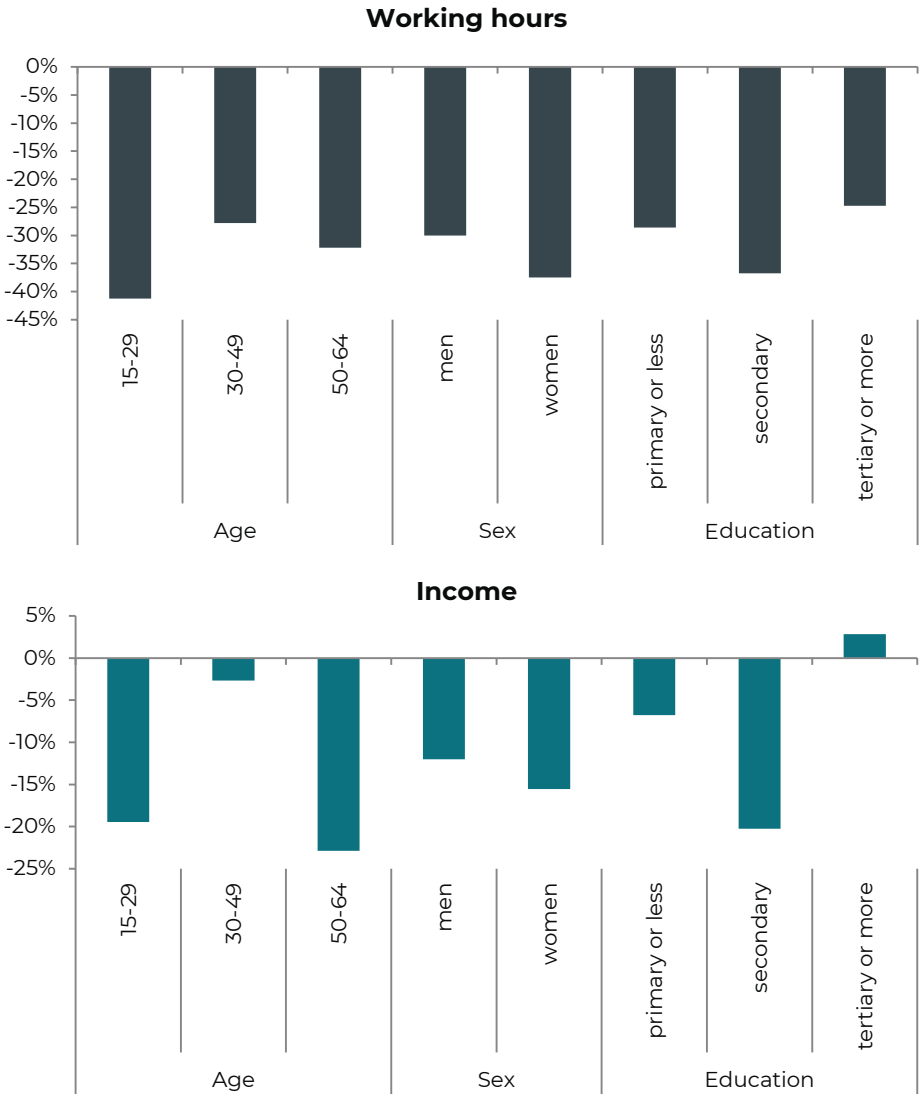
Table 9: Labor-market losses among informal workers

	Informal workers	All workers
Workers with lower working hours than usual	151.5%	155.8%
Mean wage	-1.7%	6.3%

Source: LFS

In addition, there are no significant gender and age differences in the amount of working hours lost, nor among the workers with different educational attainment (Figure 14, left), reflecting the finding that a large part of informal jobs put out indeed have been formalized. On the other hand, observed differences in income losses might

Figure 14: Working hours and income losses, by few personal characteristics of informal workers



Source: LFS

reflect the actual informal-jobs losses more succinctly. Namely, the loss of income is the highest among the oldest age cohort, women and informal workers with secondary education; conversely, highly educated informal workers recorded an increase of income, although their working hours decreased by 25%. This potentially suggests that regardless of the working-hours reduction, they continued to be paid by the employer.

Policy space

The finding that most of the jobs lost during the pandemic are likely to have been informal is worrying. It is a clear reflection of the notion that due to the informality of their employment, these workers were not eligible for the crucial job-retention subsidy by the government. However, we assume that it was exactly this measure that 'forced' informal jobs to formalize. Some of the measures should be directed toward increasing the awareness about the benefits of formal employment, increasing the skills and employability of informal workers to gain access to formal job, providing subsidies for formalization, entrepreneurship development packages and access to market and finance etc.

Yet, measures during pandemic should be available for those who stay informal for various reasons. The crucial measure including relaxation of the criteria to enter the GMA system was particularly important to quickly facilitate a safety net for informal workers, as declared by the government. We recommend extension of the duration of the relaxed criteria throughout 2021, in order to use its potential for softening poverty incidence in the country. The proposal of a temporary basic income (TBI) will facilitate better coverage of informal workers during the pandemic, despite one-off assistances mentioned earlier also decreased the incidence of poverty among informal workers.

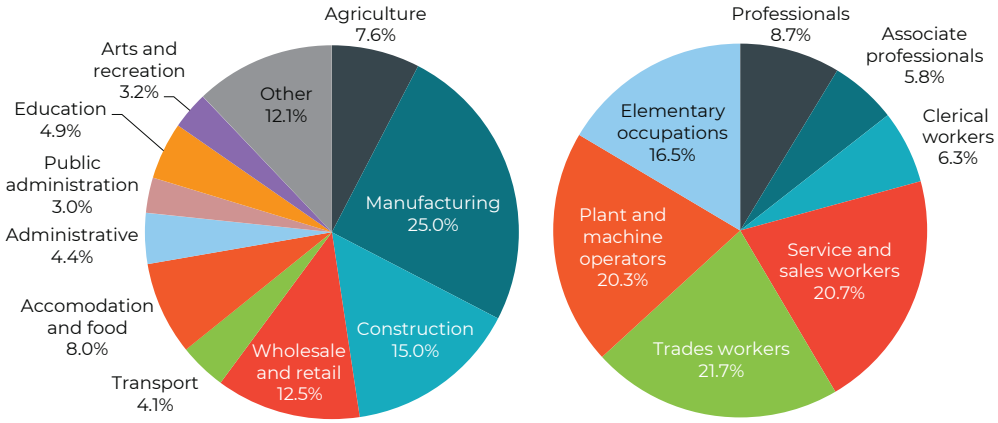
4.5 WORKERS WITH ATYPICAL WORKING ARRANGEMENTS

Atypical contracts are generally defined as employment contracts that do not conform to a standard i.e. open-ended and full-time contract. This can encompass many types of contracts, including part-time, fixed-term, temporary, casual and seasonal. For the purpose of this analysis, we take into account all workers who do not have standard, open-ended contracts as well as workers without employment contract with non-standard working time. LFS prevents that atypical contracts of other types are considered.

Precariousness of the workers with atypical working contracts

In 2019, 118 thousand workers had an atypical working contract. More than half of them are low-skilled workers (Figure 15, right), predominantly employed in the most affected sectors by the pandemic: manufacturing (25%), construction (15%) and wholesale and retail (12.5%) (Figure 15, left).

Figure 15: Workers with atypical contracts by sector and occupation

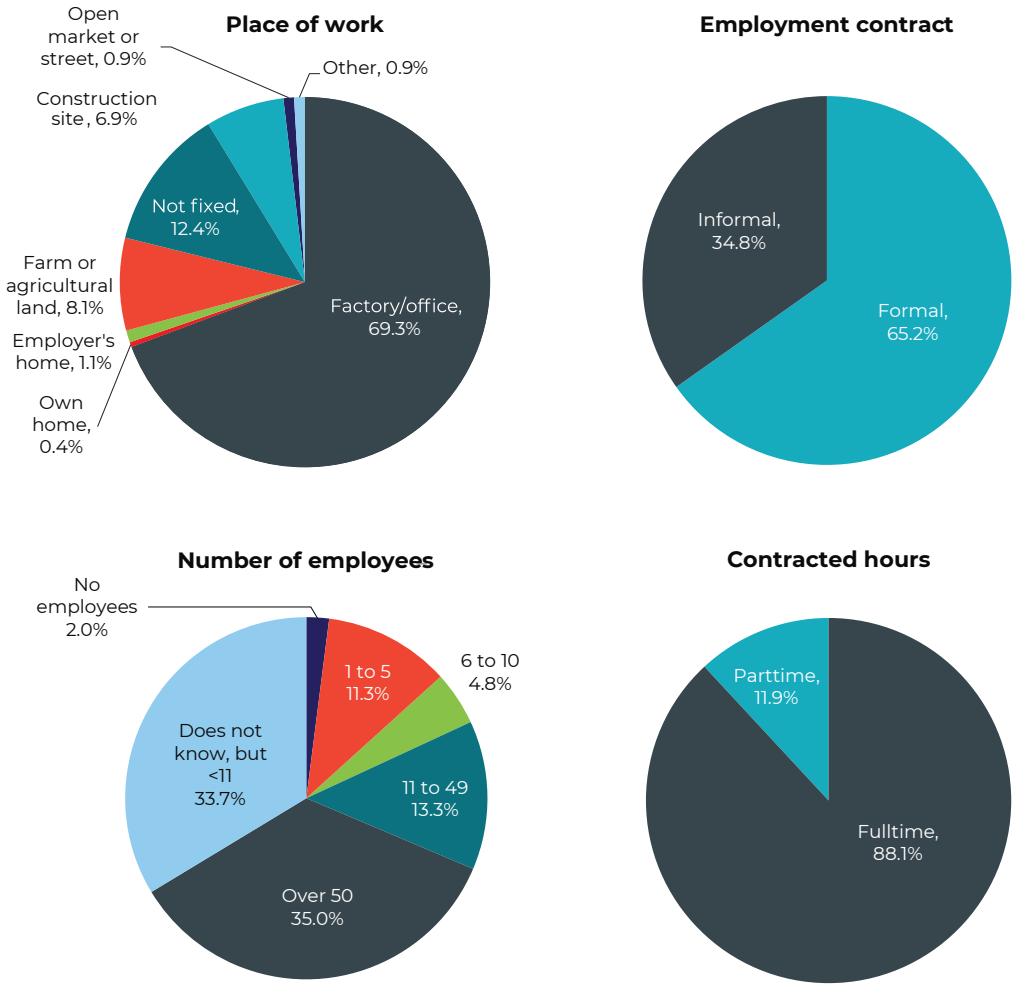


Source: LFS

Note: The share of workers in the sectors and occupations that are not shown on the figure is less than 3%.

If the worker has an open-ended or fixed-term working contract, then he/she has written contract, therefore is in formal employment. However, the duration of working hours (full-time or part-time) is not connected to the formality of the employment. Hence, nearly 35% of the workers with atypical contracts are informal, which makes them susceptible for firing. Also, they are not eligible for the job retention measures that was provided by the government during the pandemic. Figure 16 reveals that majority of these workers work in large companies, perform the job at a factory or in an office, and 11% are part-time workers.

Figure 16: Characteristics of the workers with atypical working arrangements



Source: LFS

Losses during pandemic

Unlike the other groups of precarious workers subject to this analysis, the number of workers with atypical working contracts increased by more than 7 thousand (Table 10), probably because of the following reasons: first, due to the uncertainty created by the pandemic, most of the new jobs were arranged at atypical working conditions (fixed-term and/or part-time); and second, some informal jobs were formalized using fixed-term working contract to attain eligibility for the job retention measures provided by the government (see Sections 4.2 and 4.3). Given that the creation of new jobs during the peak of the pandemic was limited, the latter reason is more likely.

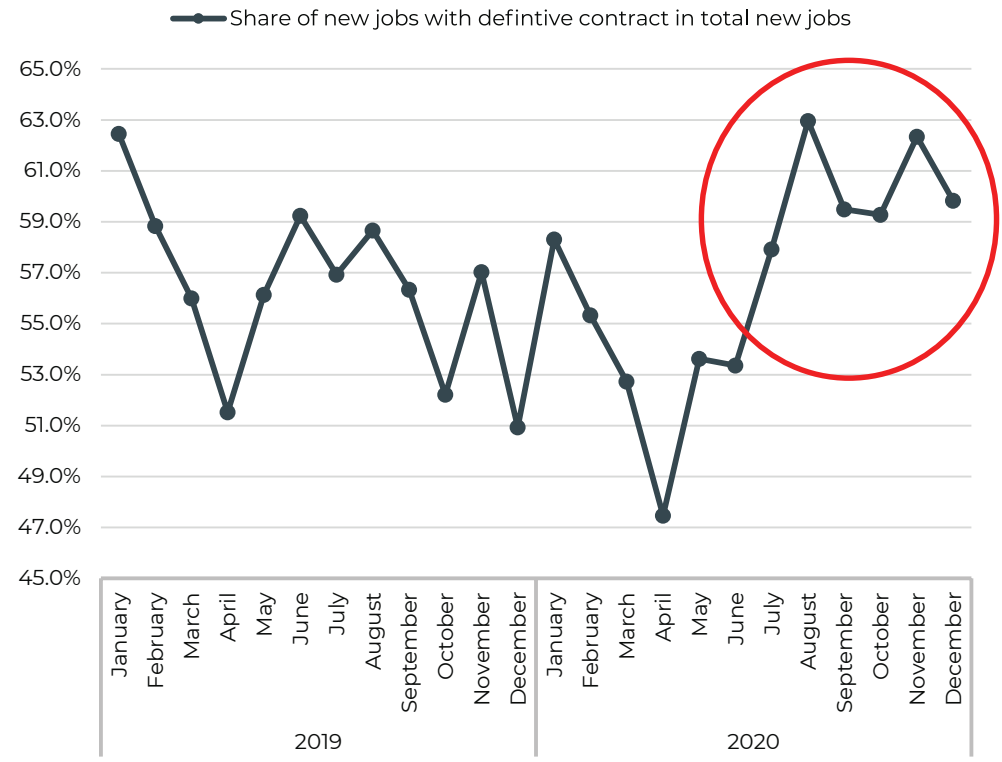
According to the data from the Employment Service Agency, despite the number of new registered jobs over 2020 declined compared to 2019, there is a small visible sign that the creation of jobs with definite-time and seasonal contracts accelerated past August 2020 (Figure 17). This is around the time of announcement of the fourth package of economic measures which contained the renewed "MKD14.500 per worker" measure. Hence, in this data, we find limited support to the notion that jobs at atypical contracts were more prevalent during the pandemic.

Table 10: Change in the number of workers with atypical contract

	Number of workers with atypical contract	Rest (workers with typical and no written contract)	TOTAL
Before the pandemic	118,002	678,861	796,915
During pandemic	125,405	664,003	754,749
Change	+7,403	-14,858	-7,427
	+6.3%	-2.2%	-0.9%

Source: LFS

Figure 17: Share of new jobs on atypical working arrangement in total new jobs



Source: Employment Service Agency of North Macedonia.

Atypical workers lost 14.9% of the amount of working hours which is similar to all workers, while the increase in those working less than usual was 3.5 times (Table 11). The latter is likely because of the high share or workers with atypical working arrangements in the sectors that were completely closed in the peak of the pandemic, like accommodation and food service. Income of atypical workers increased by 18.8%, larger increase than that of all workers, which may be partially due to job formalization already described.

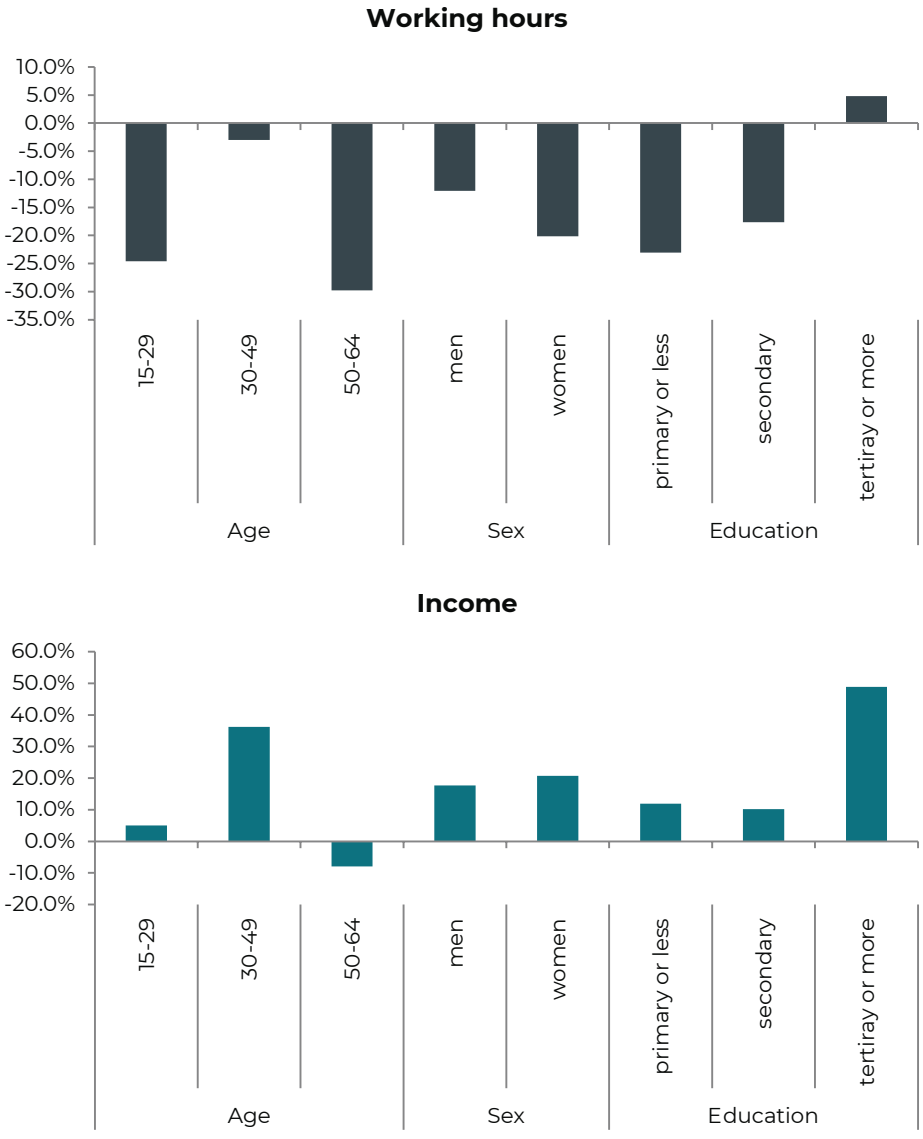
Table 11: Labor-market losses among workers with atypical contract

	Number of workers with atypical contract	Rest (workers with typical and no written contract)
Actual hours worked	-14.9%	-16.6%
Workers with lower working hours than usual	266.1%	155.8%
Income lost	18.8%	9.4%
Mean wage	5.2%	6.3%

Source: LFS

The oldest and youngest age cohorts of the atypical workers faced the largest decline in working hours, and the smallest increase of income (Figure 18). The prime-age workers (30-49) lost only 3% of their working hours while their income increased by more than 36%. Workers with high educational attainment recorded an increase in working hours and a significant increase of 48% in income. Employment of atypical workers in sectors with solid performance during the pandemic, like finance, insurance, ICT, might be one plausible explanation on these movements.

Figure 18: Working hours loss, by few personal characteristics of workers with atypical contract



Source: LFS

Policy space

A large part of the increased number of workers with atypical working arrangements during the pandemic might due to the job retention measure "MKD14.500 per worker". This implies that a potential positive externality of this measure may have been the formalization of informal jobs on atypical working arrangements. Topping up a reemployment subsidy to this measure may have saved workers whose contract expired during the pandemic, as well as support formal employment.

Enabling entry in the unemployment benefits' system should be considered to shield workers who lost their job due to contracts' expiry. At the beginning of the pandemic, the government adopted a Decree to temporary expand the coverage of the unemployment benefit to all workers who lost their jobs in the period March – April 2020, regardless of the reason. Expanding the coverage of unemployment benefits among all those losing jobs may alleviate labor market consequences of future similar shocks.

PRECARIOUSNESS OF JOBS IN NORTH MACEDONIA: FURTHER ANALYSIS

Precariousness is compounding; for example, a worker without a contract, working in the home of the employer and with short hours (part-time) is certainly far more vulnerable than a low-pay worker in formal employment in large factory. To understand the multi-facet nature of precariousness of jobs, we analyze the factors behind the intensity of the precariousness.

To assess whether the pandemic led to changes in the probability to be in a precarious employment, we employ an ordered probit model that establishes a link between the precariousness of job and the personal and households' characteristics of the workers. The precariousness of job is defined through an index taking the theoretical values from 0 (no precarious at all) to 11 (highly precarious). While, we use age, sex, educational attainment, marital status, position of the worker in the household, household size and the share of children and elderly in the worker's household, as personal and households' characteristics that may portray the probability of a worker to be in a precarious employment of certain intensity. The variables are explained in Table 12.

Table 12: Explanatory variables

Variable	Values
Precariousness of job	Non-precarious job 0 to Highest precariousness 11
Gender	Female = 0 Male = 1
Age	15-29 = 1 30-49 = 2 50-64 = 3
Marital status	Single = 0 Married = 1
Level of education	Primary or less = 1 Secondary = 2 Tertiary or higher = 3
Position in the household	Not a head of the household = 0 Head of the household = 1
Household size	Number of household members
Share of children	The ratio of the number of children (0-17) and the total number of household members
Share of elderly	The ratio of the number of elderly (65+) and the total number of household members

The estimation results are presented in Table 13, where the first column shows the results for both periods covered with this research, i.e. second and third quarter of 2019 and 2020. The last two columns present the results for 2019 and 2020 separately, and their comparison reveals the impact of the pandemic.

The sign of the coefficient shows the direction of change of the dependent variable with changes in the independents, while estimations are not yet interesting for interpretation at this stage because we will be observing the marginal effects later.

Table 13: Ordered probit results

Variables	All	Pre-pandemic	During pandemic
Men	0.0626*** (0.0224)	0.00539 (0.0303)	0.123*** (0.0332)
15-29	0.751*** (0.0351)	0.714*** (0.0477)	0.795*** (0.0519)
30-49	0.227*** (0.0244)	0.187*** (0.0335)	0.269*** (0.0355)
Secondary education	-1.030*** (0.0245)	-1.001*** (0.0324)	-1.064*** (0.0373)
Tertiary education or more	-1.169*** (0.0278)	-1.220*** (0.037)	-1.125*** (0.0417)
Head	-0.130*** (0.0265)	-0.111*** (0.0358)	-0.152*** (0.0392)
Married	-0.216*** (0.0268)	-0.219*** (0.0367)	-0.211*** (0.0394)
Household size	0.0135* (0.00775)	0.0175* (0.0102)	0.00776 (0.0119)
Children (rate of dependency)	0.0316 (0.0622)	-0.0456 (0.0842)	0.106 (0.092)
Elderly (rate of dependency)	-0.124** (0.0605)	-0.267*** (0.0831)	0.0173 (0.0879)
Observations	17.699	9.269	8.430

Source: Author's calculations.
*Note: *, **, *** means that the null hypothesis is rejected at 10, 5, and 1% levels. The values in brackets show the standard error.*

Results suggest that all personal characteristics (age, sex, education, marital status and workers' position in the household) describe the various intensity of precariousness of the job, while households' characteristics (its size and the share of children and elderly) are not statistically significant. Generally, estimations reveal that men and younger workers have higher probability to experience higher job precariousness, compared to women and older workers, respectively. The probability of having highly precarious job reduces with education, for married workers and those considered heads of their households. Given their role in the household, as parents, spouses and/or heads, they usually seek for a well-paid, secure and formal employment in order to secure the livelihood of the household. The same significances (except for sex) and signs hold before and during the pandemic. The fact that sex is important only during pandemic may suggest that the vulnerability of male workers at the workplace emerged and/or intensified as a result of the pandemic.

Table 14 presents results for men and women separately, revealing some gender differences in portraying of job precariousness intensity. The significances and signs are identical as those presented in Table 13, while the magnitude will be elaborated within the marginal effects' estimations. However, these results reveal some key patterns. Before the crisis, prime-age women experienced higher probability to be in a more precarious employment compared to men, but lower probability to face higher precariousness compared to the period during the crisis.

Highly educated women have had lower incidence of precarious employment compared to highly educated men, especially before the crisis. Before the pandemic, women who were heads of the household had lower probability for high precariousness intensity, while that probability increased during the pandemic and equalized with that one of men. Women with children had higher probability of being in a more precarious employment before the pandemic, while men faced the opposite. During the crisis, the share of children in the household became insignificant for the precariousness intensity.

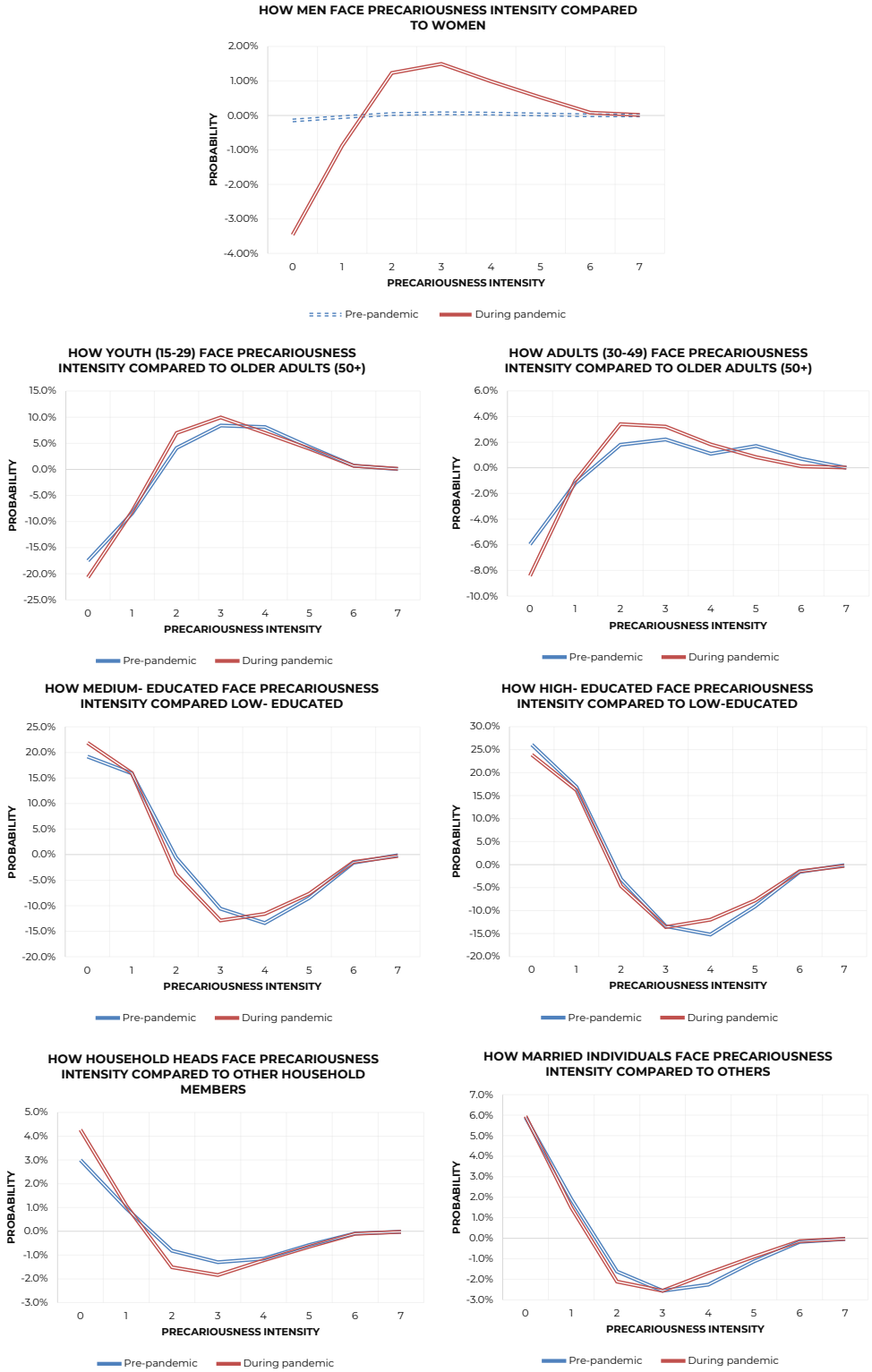
Table 14: Ordered probit results by workers' gender

Variables	Men		Women	
	Pre-pandemic	During pandemic	Pre-pandemic	During pandemic
15-29	0.738*** (0.0657)	0.806*** (0.0697)	0.715*** (0.0714)	0.786*** (0.0791)
30-49	0.188*** (0.0444)	0.269*** (0.0467)	0.226*** (0.0525)	0.266*** (0.0555)
Secondary education	-0.978*** (0.0406)	-1.094*** (0.0465)	-1.063*** (0.0535)	-1.015*** (0.0629)
Tertiary education or more	-1.077*** (0.0479)	-1.030*** (0.0538)	-1.433*** (0.0598)	-1.227*** (0.0668)
Head	-0.0304 (0.0485)	-0.150*** (0.0533)	-0.311*** (0.0738)	-0.166** (0.0806)
Married	-0.234*** (0.0535)	-0.216*** (0.0563)	-0.293*** (0.0568)	-0.234*** (0.0641)
Household size	0.0274** (0.0137)	0.0083 (0.0166)	0.00662 (0.0155)	0.00162 (0.0184)
Children (rate of dependency)	-0.280** (0.1140)	0.152 (0.1280)	0.317** (0.1280)	0.0957 (0.1350)
Elderly (rate of dependency)	-0.333*** (0.1120)	-0.0662 (0.1130)	-0.0935 (0.1260)	0.196 (0.1430)
Observations	5.530	5.000	3.739	3.430

Source: Author's calculations.
*Note: *, **, *** means that the null hypothesis is rejected at 10, 5, and 1% levels. The values in brackets show the standard error.*

To depict the relation between the personal characteristics and the intensity of precariousness, we estimate marginal effects, presented on Figure 19 (and in Table 15 and Table 16 in the Annex). We are presenting and interpreting the marginal effect of the personal characteristics that were statistically significant within the ordered probit estimations.

Figure 19: Ordered probit marginal effect results



Source: Author's calculations.

During the pandemic, men's probability to find in no precariousness has been lower by 3.5% compared to women; and 1.4% higher to find in precariousness of intensity 3 (Figure 19, panel A). Then, it declined and for levels of precariousness of 6 and 7, men did not have different probability than women. Likewise, men and women did not differ in their probabilities to find in precariousness of various intensities before the pandemic.

Before the pandemic, young (15-29) and prime-age (30-49) workers have been 17.5% and 5.6% respectively, less likely to be in a non-precarious employment compared to the oldest age cohort. As the value of the precariousness index increases, the probability of young age cohort to feel precariousness intensity also increases. During the pandemic, the probability among the younger workers to be in precariousness intensity of 2 and 3 further increased, suggesting that they have been harder hit by the crisis than the older adults (Figure 19, panel B). The pattern is similar when the prime-age cohort is compared to older adults, but the magnitude of probabilities reduced. Also, the impact of the crisis on the prime-age workers aggravated the probability that they report a precariousness intensity of 2, 3 and 4 (Figure 19, panel C).

Workers with high or secondary education have 26.1% and 19.2% higher probability to be in a non-precarious employment compared to the primary-educated workers. The crisis slightly improved the probability of secondary-educated to find in a precariousness intensity of 2 and 3 (Figure 19, panel D), while it aggravated the probability of tertiary-educated to find in an intensity of 4 (Figure 19, panel E).

If the worker is married or head of the household, the probability being in non-precarious employment is 5.9% and 3% higher respectively (before the pandemic) and 6% and 4.3% respectively (during the pandemic), than a single workers and worker who has not the main position in the household, respectively. During the pandemic, heads of households were more shielded in finding themselves in precariousness of intensity 2 and 3 (Figure 19, panel F), while married persons became more exposed to precariousness of intensity 4 (Figure 19, panel G).

CONCLUSION AND POLICY INFERENCE

The health and economic crisis caused by the Covid-19 hit North Macedonia after years of steady labor market improvement. It brought to light the structural disparities and labor market weaknesses, thus hitting some groups of workers more severely than others. In general, the low-pay workers, workers from the informal economy, paid domestic workers and unpaid family workers are among the most affected in terms of losses of jobs and incomes. The cross-analysis of the five groups of workers suggests that the total loss of jobs during the pandemic of about 7.5 thousand at the annual level has been predominantly among low-pay workers, of whom a large share are paid domestic workers and informal workers.

The observed die-out of a large share of low-pay jobs must not be exclusively attributed to the pandemic but rather to the wage increases induced by two government policies that were enacted just before the crisis hit: the increase of the minimum wage and the law subsidizing social contributions of a wage increase in the range of 600 to 6,000 MKD for at most three years. These two prompted a wage increase (also observed in the large average wage increase of 7.8% during 2020), prevalently in the left part of the wage distribution, by tilting the lowest-pay jobs upward, hence moving a large share of low-pay jobs above the low-pay threshold.

The observed die-out of a large share of informal jobs and unpaid family jobs, on the other hand, could be attributed to the pandemic, but must not be directly understood as job losses. Namely, to alleviate the negative consequences of the pandemic, the government of North Macedonia adopted several packages of measures. The main measure directed toward jobs retention “MKD14.500 per worker” saved more than 60 thousand jobs, yet all from the formal economy. However, to become eligible for receiving the subsidy, it is likely that a large share of informal jobs and or jobs of unpaid family workers have been formalized. The results suggest that this has been likely achieved through concluding atypical working arrangements, most likely short-term definite contracts and or definite contracts with less than full working hours.

Still, a non-negligible share of the lost jobs was formal. Such workers benefited from the extension of the unemployment benefit coverage, by allowing entrance to all newly unemployed over March and April 2020, irrespective of the basis of contract termination. While, informal workers who lost their jobs could have used the measures aimed at protecting income fallouts, primarily the rapid entry into the system of guaranteed minimum assistance and the two rounds of one-off aid.

At present, the economy and the labor market see a light at the end of the pandemic tunnel. The vaccination progresses with sufficient pace and government

expectations are that herd immunity could be achieved by the mid of this summer. Still, the above analysis devises some policy lessons which should clearly move forward from social to development component.

The notion that the need for extension of any wage subsidy measure prevalently expired is valid. However, if potentially new measures include forms of wage subsidization, we recommend that they include a strong reemployment component to support reentry on the labor market of workers who lost their jobs during the pandemic. While this measure yet covers only formal workers, it may further support the formalization of some informal jobs, at atypical working arrangements at the minimum, which is important for the post-pandemic period.

The results suggest that non-negligible formalization gains may have been achieved during the crisis. The momentum should be reaped by policymakers and such gains converted into longer-term benefits. As informal workers are predominantly nested in agriculture in the form of unpaid family workers, the government may introduce incentives to prevent that these workers retract back into informality. Such incentives must be observed within the current policies aimed at agriculture, in the sense that these are accustomed in terms of scope, coverage and eligibility that discourage retraction of formalized workers into informality.

For the rest of informal workers who formalized their jobs through concluding atypical working contracts, mechanisms should be put in place to incentivize them to retain them and possibly convert into permanent contracts. One way to think it so seize the momentum of preparation of the new Labor Code and include regulatory prohibition that such contracts are extended endlessly with preservation of the definite nature of the contract. However, a too strong regulation of these contracts may actually provoke informalities again. Instead, both employers and employees (and particularly unpaid family workers who formalized in their small agricultural holdings) should be motivated to think about permanency of the contract: special tax and social contributions brackets may help at the beginning, but over the long haul, such contracts should be self-sustainable.

An illustrative example with respect to the latter is the proposal to introduce vouchers for childcare to support formalization of paid domestic workers. Parents of children up to certain age (usually 3) buy childcare vouchers with part of their salary and do not pay personal tax and social contributions for that part of the salary (capped at certain level). Namely, each employed parent can spare a pre-set amount per month/year of their salary into own childcare voucher account and use it to pay for registered childcare provider. The possibility to use it only for hiring registered childcare providers will result in formalization of many currently informal paid domestic jobs.

Nevertheless, shielding those who may not easily return on the labour market or who have lost significant parts of their incomes during the pandemic may be still inevitable. The potential of the extended criteria for obtaining GMA to

compensate part of the lost income among the most vulnerable workers and their households, should be used throughout the whole 2021, as per Finance Think's earlier recommendation. An overhaul of the unemployment benefits system in North Macedonia may be looming since the current design is too rigid: it secures coverage only for those who were laid off by an act of the employer, while in reality many contracts are terminated de-facto on the request of the employer while de-jure by mutual consent or even by an extorted request of the employee. A new solution of the unemployment benefit system must consider expansion of the coverage, while working in parallel with the labor inspectorate to prevent misuse of contract termination and breach of workers' rights.

Except measures and policies for alleviating pandemic's immediate consequences, structural changes that will make the labor market safer, fairer and more effective in combating future crises and shocks, should be thoroughly considered. A more efficient policy coherence and participative dialogue between economic and social stakeholders should take special care of the most disadvantaged and precarious workers, in order to avoid future rise of inequalities. Our recommendations as part of this approach include a coherent set of activities that will improve the response of the Macedonian labor market during future shocks and will reduce the incidence of job precariousness:

1. Using the social dialogue as a tool for creating balanced response and sustainable mid-term recovery after future labor market disruptions;
2. Strengthening the existing regulatory framework through providing equal treatment and working conditions to all workers, regardless of their employment status, for ensuring fair and non-discriminatory working environment;
3. Strengthening employment services and institutional capacities for better labor market resilience and stronger policy infrastructure;
4. Easing the transition to formal employment through - activities of increasing awareness and measures for making the formal employment more attractive;
5. Increasing the skills and employability of the precarious workers through tailor-made trainings, workshops and internships for better opportunities and access to non-precarious employment.

REFERENCES

Benach, J., Vives, A., Amable, M., Vanroelen, C., Tarafa, G. and Muntaner, C. (2014) Precarious employment: Understanding an emerging social determinant of health. Annual Review of Public Health 35, pp. 229-253.

Bewley, H. and Forth, J. (2010) Vulnerability and adverse treatment at the workplace. BIS Department for Business, Innovation and Skills Employment Relations Research Series 112

Bocquier, P., Nordman, C. and Vescovo, A. (2010) Employment vulnerability and earnings in Urban West Africa. Document de Travail UMR DIAL 225.

Bussolo, M., Sharma, S. and Timmer, H. (2020) COVID-19 has worsened the woes of South Asia's informal sector. The World Bank Blogs.

Carls K (2012) Precarisation and the Crisis. The growing challenge of transforming precarious into decent work. International Training Centre of the International Labor Organization.

Chaykowski, R. (2005) Non-standard work and economic vulnerability. Canadian Policy Research Network. Vulnerable Workers Series No. 3.

Cranford, C., Vosko, L. and Zukewich, N (2002) The gender of precariousness in the Canadian labor force. Atkinson Faculty of Liberal and Professional Studies, York University.

Fevre, R., Foster, D., Jones, M. and Wass, V. (2016) Closing disability gaps at work. Cardiff University: Cardiff, UK.

Finance Think (2020a) Was it necessary to provide financial support to companies to retain jobs during Covid-19 crisis? Skopje: Finance Think – Economic Research & Policy Institute Policy Brief No. 41.

Finance Think (2020b) To what extent will Covid-19 increase poverty in North Macedonia? Skopje: Finance Think – Economic Research & Policy Institute Policy Brief No. 43.

Finance Think (2021) Agricultural workers – a silent victim of the pandemic. Skopje: Finance Think – Economic Research & Policy Institute Policy Brief No. 46.

Fudge, J. and Owens, R. (2006) Precarious work, women and the new economy. Hart Publishing. International Series in Law and Society.

Greenan, N. and Seghir, M. (2017) Measuring vulnerability to adverse working conditions: Evidence from European countries. HAL Working Papers.

Greene, W. (2012) Econometric analysis. Seventh edition. Boston: Pearson Education.

Hudson, M. (2006) The hidden one-in-five: winning a fair deal for Britain's vulnerable workers. London, UK TUC Publications.

ILO (undated) The regulatory framework and the informal economy: 4.b2 Homeworkers: reducing vulnerabilities through extending and applying the work. International Labor Organization. Available from: https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_policy/documents/publication/wcms_210445.pdf [Access date: 11 May 2021].

ILO (2020a) Impact of the COVID-19 crisis on loss of jobs and hours among domestic workers. International Labor Organization.

ILO (2020b) Global wage report 2020-21: Wages and minimum wages in the time of COVID-19. ILO Flagship Report. International Labor Organization.

ILO (2020c) ILO Brief: Impact of the lockdown measures on the informal economy. International Labor Organization.

ILO/EBRD (2020) Covid-19 and the world of work. Rapid assessment of the employment impacts and policy responses. North Macedonia. International Labor Organization.

ILO/OECD (2020) The impact of the COVID-19 pandemic on jobs and incomes in G20 countries. International Labor Organization and Organization for Economic Cooperation and Development.

Jetha, A., Martin Ginis, K., Ibrahim, S. and Gignac, M. (2020) The working disadvantaged: the role of age, job tenure and disability in precarious work. BMC Public Health 20:1900

Kalleberg L. (2009) Precarious Work, Insecure Workers: Employment Relations in Transition. American Sociological Review 74(1) pp. 1–22.

Kalleberg, A. (2012) Job quality and precarious work: Clarifications, controversies and challenges. Work and Occupations 39(4), pp. 427-448.

Kebede, T., Stave, S. and Katta, M. (2020a) Facing multiple crisis: Rapid assessment of the COVID-19 impact on vulnerable workers and small-scale enterprises in Lebanon. International Labor Organization.

Kebede, T., Stave, S. and Katta, M. (2020b) Rapid assessment of the COVID-19 impact on vulnerable workers and small-scale enterprises in Iraq. International Labor Organization.

Kebede, T., Stave, S. and Katta, M. (2020c) Facing double crisis: Rapid assessment of the COVID-19 impact on vulnerable workers in Jordan. International Labor Organization.

Kinder, M. and Ross, M. (2020) Low-wage workers have suffered badly from COVID-19. In Allen, J. and West, D. (Eds.) Reopening America: How to save lives and livelihoods. Brookings Report.

Learning and Work Institute (2020) The impact of the coronavirus outbreak on London's low-paid workers.

Lewchuk, W. (2017) Precarious jobs: Where are they, and how do they affect well-being? The Economic and Labor Relations Review 28(3), pp.402-419.

Lund, S., Madgavkar, A., Manyika, J., Smit, S., Ellingrud, K., Meaney, M. and Robinson, O. (2020) The future of work after COVID-19. McKinsey & Company Report.

O'Regan, S., Hill, D. and Neathey, F. (2005) The vulnerable worker: A definition and research approach. Brighton Institute for Employment Studies.

Petreski, B., Petreski, M., Stojkov, A., Tomovska-Misoska, A., Parnardzieva-Zmejkova, M., and Dimkovski, V. (2020) Bridging measures to alleviate Covid-19 consequences: Design proposal, cost and key effects. Skopje: Finance Think – Economic Research & Policy Institute, Policy Study 32.

Pollert, A. and Charlwood, A. (2009) The vulnerable worker in Britain and problems at work. Work, Employment and Society 23(2), pp. 343-362.

Saunders, R. (2003) Defining vulnerability in the labor market. Canadian Policy Research Network. Research Paper W/21.

Tompa, E., Scott-Marshall, H., Dolinschi, R., Trevithick, S. and Bhattacharyya, S. (2007) Precarious employment experiences and their health consequences: Towards a theoretical framework. Work 28, pp. 209-224.

UN Women (2020) From insights to action: Gender equality in the wake of COVID-19. UN Women New York.

UN Women/ILO/ECLAC (2020) Remunerated domestic workers in Latin America and Caribbean and the COVID-19 crisis. UN Women, International Labor Organization and the Economic Commission for Latin America and the Caribbean.

Vosko, F., MacDonald, M. and Campbell, I, (2009) Introduction: Gender and the concept of precarious employment. In: Vosko LF, MacDonald M and Campbell I (eds) Gender and the contours of precarious employment. New York: Routledge, 1–25.

WIEGO (2020) Domestic workers are at the frontline of this pandemic, and at risk. Women in Informal Employment: Globalizing and Organizing Brief.

World Bank (2020) Which jobs are most vulnerable to COVID-19? What an analysis of the European Union reveals. World Bank Groups Research & Policy Briefs No. 34.

World Bank (2020a) Economic and social impact of COVID-19: Poverty and wellbeing of the households. Regular Economic Report for Western Balkan.

Young C. (2010) Gender Differences in Precarious Work Settings. Industrial Relations 65(1), pp. 74–97.

ANNEX: ORDERED PROBIT MARGINAL EFFECTS ESTIMATIONS

Table 15: Ordered probit marginal effects – pre-pandemic

	Precariousness intensity							
VARIABLES	0	1	2	3	4	5	6	7
Sex	-0.00145 (0.0082)	-0.000469 (0.0026)	0.000399 (0.0022)	0.000631 (0.0035)	0.000556 (0.0031)	0.000279 (0.0016)	4.33E-05 (0.0002)	8.56E-06 (0.0000)
1.age_c	-0.175*** (0.0115)	-0.0833*** (0.0064)	0.0407*** (0.0035)	0.0841*** (0.0057)	0.0806*** (0.0061)	0.0434*** (0.0042)	0.00734*** (0.0016)	0.00154* (0.0009)
2.age_c	-0.055*** (0.0102)	-0.0115*** (0.0019)	0.0188*** (0.0036)	0.0228*** (0.0041)	0.0172*** (0.0030)	0.00740*** (0.0013)	0.000990*** (0.0003)	0.000174 (0.0001)
2.edu	0.192*** (0.0060)	0.159*** (0.0062)	-0.00635* (0.0033)	-0.106*** (0.0045)	-0.134*** (0.0063)	-0.0845*** (0.0057)	-0.0155*** (0.0030)	-0.0033* (0.0020)
3.edu	0.261*** (0.0088)	0.169*** (0.0062)	-0.032*** (0.0044)	-0.134*** (0.0054)	-0.152*** (0.0068)	-0.0910*** (0.0060)	-0.0162*** (0.0031)	-0.0034* (0.0020)
head	0.0300*** (0.0096)	0.00970*** (0.0032)	-0.008*** (0.0027)	-0.013*** (0.0042)	-0.012*** (0.0037)	-0.0058*** (0.0019)	-0.00089*** (0.0003)	-0.00018 (0.0001)
married	0.0589*** (0.0099)	0.0191*** (0.0033)	-0.016*** (0.0028)	-0.025*** (0.0043)	-0.023*** (0.0039)	-0.0113*** (0.0020)	-0.00176*** (0.0004)	-0.00035 (0.0002)
Observations	9.269	9.269	9.269	9.269	9.269	9.269	9.269	9.269

Source: Author's calculations.

*Note: *, **, *** means that the null hypothesis is rejected at 10, 5, and 1% levels. The values in brackets show the standard deviation.*

Table 16: Ordered probit marginal effects – during the pandemic

	PRECARIOUSNESS INTENSITY							
VARIABLES	0	1	2	3	4	5	6	7
Sex	-0.035*** (0.0093)	-0.009*** (0.0024)	0.0123*** (0.0033)	0.0149*** (0.0040)	0.00987*** (0.0027)	0.00523*** (0.0015)	0.000815*** (0.0003)	0.000144 (0.0001)
1.age_c	-0.207*** (0.0130)	-0.080*** (0.0069)	0.0696*** (0.0048)	0.0995*** (0.0068)	0.0699*** (0.0058)	0.0395*** (0.0041)	0.00675*** (0.0017)	0.00127 (0.0010)
2.age_c	-0.084*** (0.0114)	-0.010*** (0.0016)	0.0341*** (0.0047)	0.0322*** (0.0042)	0.0182*** (0.0024)	0.00838*** (0.0012)	0.00114*** (0.0003)	0.000185 (0.0001)
2.edu	0.219*** (0.0070)	0.160*** (0.0070)	-0.038*** (0.0040)	-0.129*** (0.0057)	-0.116*** (0.0065)	-0.0765*** (0.0065)	-0.0144*** (0.0035)	-0.00282 (0.0021)
3.edu	0.239*** (0.0092)	0.162*** (0.0071)	-0.047*** (0.0048)	-0.136*** (0.0063)	-0.120*** (0.0067)	-0.0781*** (0.0066)	-0.0146*** (0.0036)	-0.00284 (0.0021)
head	0.0427*** (0.0110)	0.0108*** (0.0028)	-0.015*** (0.0039)	-0.018*** (0.0048)	-0.0122*** (0.0032)	-0.0064*** (0.0017)	-0.00101*** (0.0004)	-0.00018 (0.0001)
married	0.0595*** (0.0111)	0.0150*** (0.0029)	-0.021*** (0.0040)	-0.026*** (0.0048)	-0.0170*** (0.0032)	-0.0089*** (0.0019)	-0.00140*** (0.0004)	-0.00025 (0.0002)
Observations	8.430	8.430	8.430	8.430	8.430	8.430	8.430	8.430

Source: Author's calculations.

*Note: *, **, *** means that the null hypothesis is rejected at 10, 5, and 1% levels. The values in brackets show the standard deviation.*