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Book

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ABSTRACT

This paper provides empirical evidence on the impact of Covid-19 on unemployment and underemployment in Lithuania. Based on the Labor Force Survey, we document the evolution of the unemployment rate using broader definitions that incorporate the underemployed and marginally attached workers. Our results show that, compared to previous recessions, Covid-19 had a milder impact on the Lithuanian labor market. Moreover, Lithuania fared reasonably well relative to other Eurozone countries. However, the data reveal a substantial increase in marginal workers and underemployment during 2020, with women, young workers and individuals in rural areas being most affected by the pandemic-induced recession.

Keywords: labor market statistics, labor force, unemployment

***JEL Classification**:* E24, J21, J64

1. INTRODUCTION

The unemployment rate may be the most widely used indicator in all countries in discussions on the health of the labor market. Statistical offices around the world present aggregate (and comparable) figures on the evolution of the unemployment rate, based on the official definition established by the International Labor Organization. Although useful, this indicator does not fully capture the labor market situation. On the one hand, it overlooks important groups of people who are not included in the official definition, such as individuals who are available for work but are not actively looking for a job or workers who are underemployed, thus providing only a partial picture of unused human resources. On the other hand, the dynamics of the official unemployment rate can also provide an incomplete picture of labor market performance. For example, a decline in the unemployment rate is often taken as a positive sign. However, this decline may not always mean good news for the economy (Boeri, 2008; Bell and Blanchflower, 2018), as it may come at the expense of a higher proportion of low-paid workers, or of individuals dropping out of the labor force or taking a job that does not match their skills or needs. In addition, business cycle fluctuations imply adjustments in the extensive and intensive margin of employment (Borowczyk-Martins, 2017), but the latter is not captured in the official unemployment rate.

Due to the limitations of the traditional unemployment measure, several efforts have been made to revise the official concept or complement it with broader notions of what it means to be unemployed, taking into consideration crucial groups in society such as discouraged or marginally attached workers. For example, in 1998 at the 16th International Conference of Labor Statisticians, a new international interpretation of underemployment was introduced – *time-related underemployment*, which is based on three principles (Sengerberger, 2011): (i) willing to work additional hours/days; (ii) available to work additional hours/days; and (iii) had worked less than a specified working-time threshold. These broader definitions of employment status have the goal of providing a better picture of the labor market situation at a given point in time.

In this report, we provide a broad overview on the impact of Covid-19 on unemployment and labor underutilization in Lithuania. We follow the U.S. Bureau of Labor Statistics methodology to calculate different indicators, using the quarterly Labor Force Survey conducted by Statistics Lithuania. These measures allow us to characterize the labor market situation using alternative definitions of unemployment which consider workers whose circumstances are not captured by the traditional unemployment rate, such as individuals marginally attached to the workforce or underemployed workers.

The evidence can be summarized as follows. First, prior to the onset of the Covid-19 pandemic, the unemployment rate in Lithuania was about 6% at the end of 2019, after having reached an all-time high of 18% at the peak of the Great Recession in 2009. Second, accounting for marginally attached workers slightly increases the level of unemployment, while a broader concept of unemployment, which also includes underemployed workers, leads to a rate between 3 and 5 percentage points higher. Third, between the second quarter of 2019 and the same quarter of 2020, when the first lockdown was in place, the unemployment rate increased from 6 to 8.5%. Fourth, this increase is larger if discouraged or underemployed individuals are accounted for. Fifth, among demographic groups, the shock was especially detrimental to women, youth, and rural residents. Sixth, the impact of Covid-19 on the labor market was milder compared to the Great Recession of 2008 and, to a lesser extent, the Russian financial crisis of the early 2000s. Finally, relative to other Euro countries, Lithuania fared relatively well in terms of unemployment and underemployment.

The remainder of the report is structured as follows: Section 2 describes the data and the main concepts. Section 3 documents the evolution of unemployment and underemployment. Section 4 concludes.

2. DATA AND MEASUREMENT

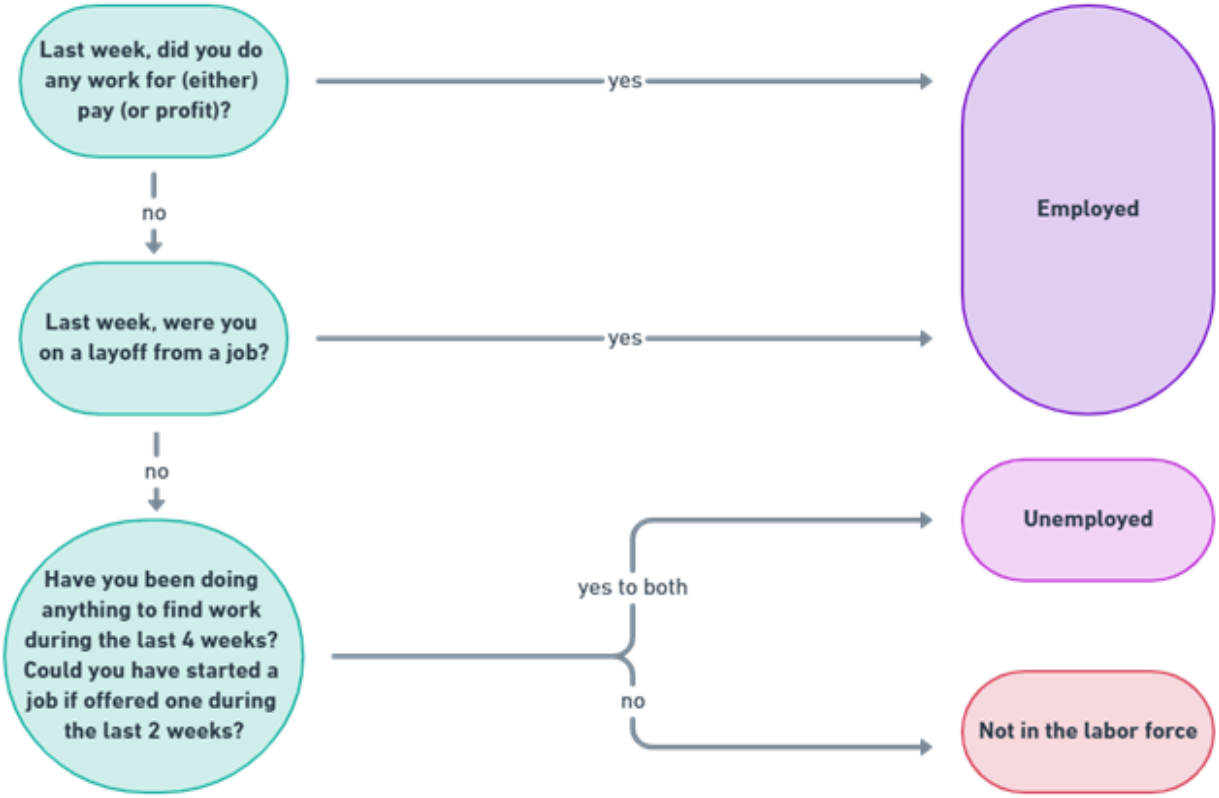
Our main data source is taken from the Labor Force Survey (LFS), carried out quarterly by Statistics Lithuania. The LFS is a nationally representative random sample of households that collects data on approximately 8,000 responding households and 15,000 individuals. For our analysis, we rely on all *publicly* available files covering the period 2011 to 2020. In addition, we only consider individuals between the ages of 15 and 55 and exclude any observations with missing information that would limit us in classifying individuals' labor force status.

The dataset contains information on demographic background and asks individuals detailed questions about their labor-market situation including type of work, multiple job holding, willingness to work more, job search behavior, or reasons for not working. We exploit the answers to these various questions to classify workers into different unemployment and underemployment categories, following the definitions provided by U.S. Bureau of Labor Statistics (BLS).

We start with the standard definition of unemployment. An individual is categorized as unemployed if she (i) is between 15 to 55 years old; (ii) is currently jobless; (iii) has been actively looking for a job in the last four weeks; and (iv) can start working within 2 weeks from the survey week.[1] Based on this definition, the traditional unemployment rate (U3) is defined as the ratio of total unemployed people to active population (employed + unemployed). Figure 1 provides the survey question schema used to assign workers to various labor market categories.

[1] Statistics Lithuania considers a broader group of workers in terms of age, as all individuals aged 15-74 are potentially part of the unemployment pool. We restrict the analysis to up to 55 to avoid issues with categorizing workers who are partially retired or about to retire. This is the main reason why there are some minor discrepancies on the level of the traditional unemployment rate reported in this work relative to official numbers.

Figure 1: Labor Market Status



We broaden the traditional concept of the unemployment rate to account for certain groups, which we define as follows. *Marginally attached workers* are individuals who are currently neither working nor looking for a job but indicate that they want and are available to work and have looked for work sometime in the recent past. *Discouraged workers* are a *subset* of the marginally attached who have given a labor-market-related reason for not currently looking for a job.[2] *Underemployed workers* are individuals who are currently employed under a part-time or a temporary contract for economic reasons, i.e., they would like to work full-time or under a permanent contract, but they have not found such a job.

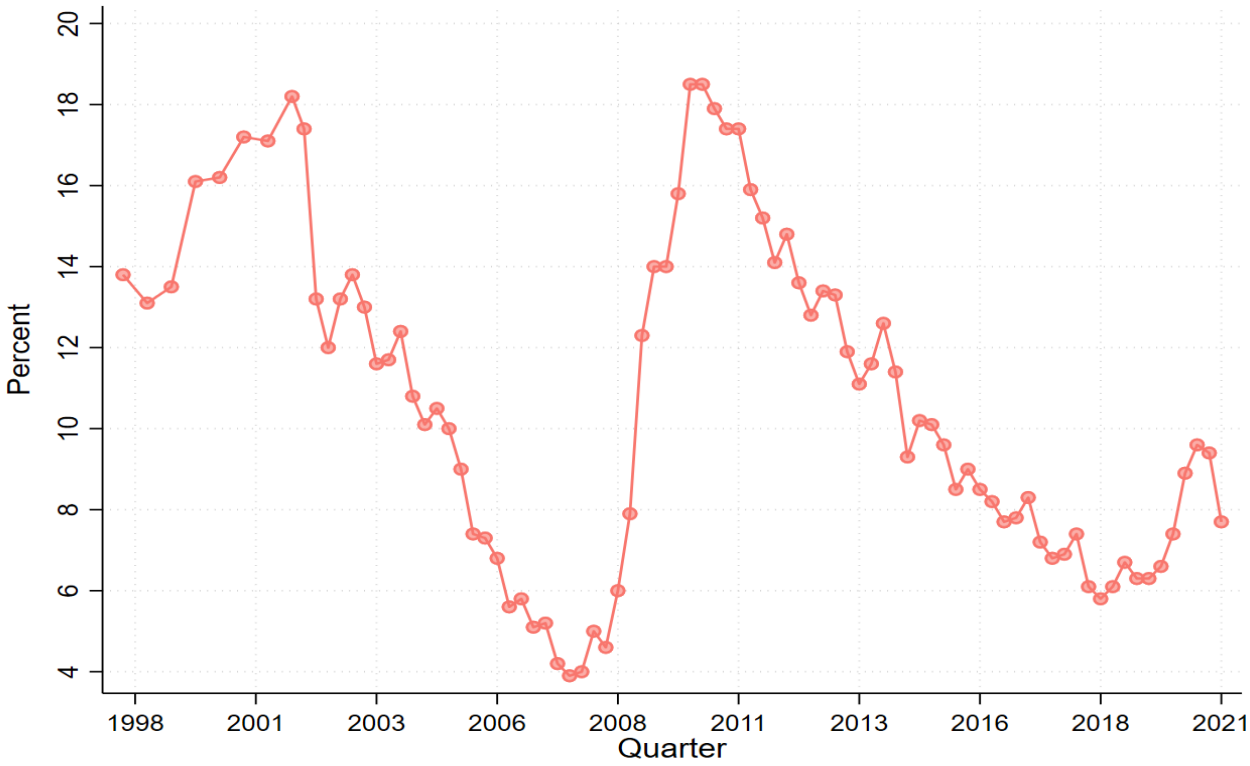
Alternative indicators, based on the traditional unemployment rate, are simply extensions of the official measure, applying the definitions discussed above. Specifically, U4 is expressed as the ratio of the unemployed plus discouraged workers to the active population plus discouraged workers. Likewise, U5 is defined the ratio of total unemployment plus all marginal workers to the labor force plus *all* marginal individuals. Finally, the broader U6 measure considers all unemployed individuals along with marginally attached workers plus the underemployed, relative to the labor force and all marginally attached individuals. The latter measure provides a more complete analysis of the labor force in terms of qualifications, experience, and availability for work. This more comprehensive picture has increased significance during Covid-19, as many workers have undergone reductions in hours or have taken some type of temporary layoff or furlough. Although these individuals would not be included in the traditional unemployment rate, alternative definitions such as U4 and U6 would pick them up.

[2] For instance, they think that the current economic situation may not allow them to find a job, they are on temporary layoff, etc.

3. UNEMPLOYMENT AND UNDEREMPLOYMENT

We begin our discussion by providing some perspective on the period we are going to analyze, looking at the longest time series available from aggregate statistics. Figure 1 shows the evolution of the official unemployment rate between 1998 and 2020. The period encompasses two economic cycles, including the Russian financial crisis of the early 2000s, the Great Recession corresponding to 2008-2009, and the Covid-19 pandemic shock in 2020. As can be seen, although the unemployment rate increased after each of the negative shocks, the magnitude of the increase varied greatly. The level of unemployment reached during the peak of the Great Recession was like the maximum observed during the Russian financial crisis in the early 2000s. Yet, although the levels were similar, the rate of increase in unemployment following the negative shock varied. More specifically, while the unemployment rate increased by 4 percentage points between 1999 and 2001, with the onset of the Great Recession it skyrocketed from a historic low of 4% to approximately 18% between 2008 and 2010. With respect to the Covid-19 shock, the impact on the labor market was not as destructive as that of the Great Recession: between the second quarter of 2019 and the same quarter of 2020 (first lockdown period) the unemployment rate increased from 6 to 8.5%, subsequently peaking at 9.3% in the third quarter of 2020.

Figure 2: Quarterly Unemployment Rate, 1998-2020



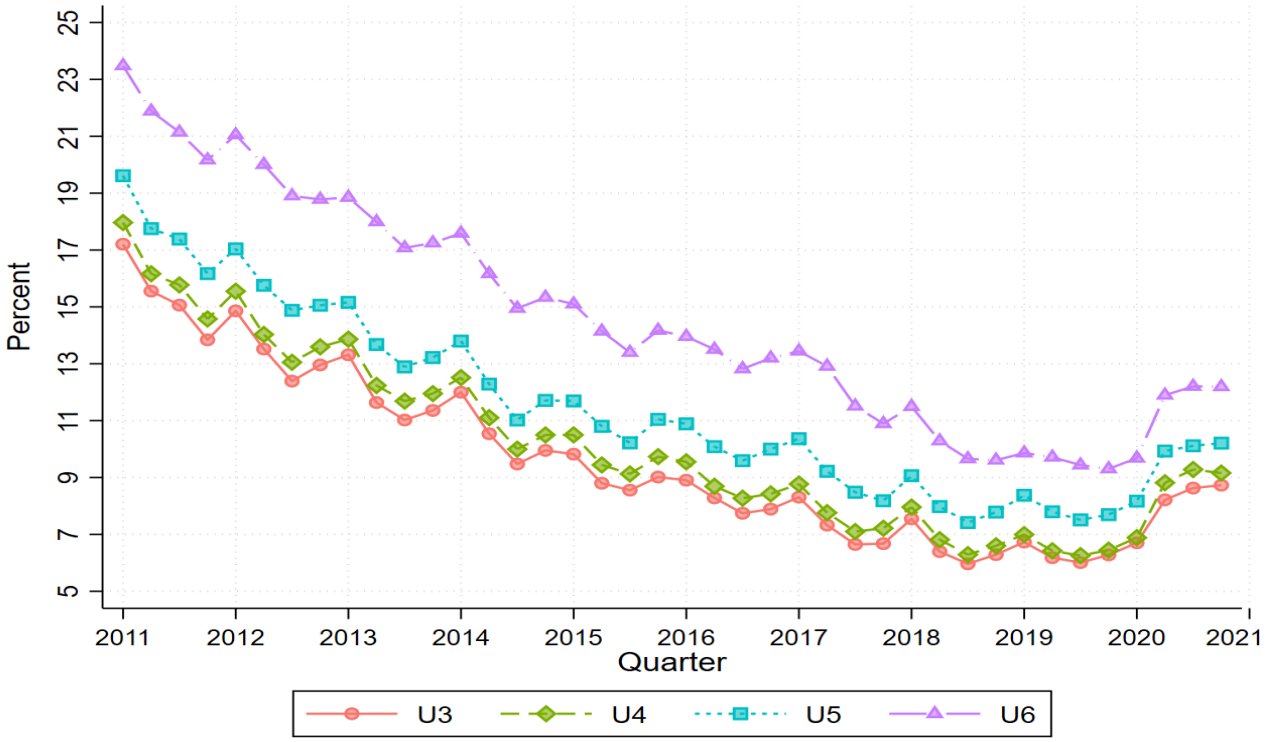
Source: Statistics Lithuania.

We now turn to our sample period and use the microdata to investigate how alternative unemployment measures evolved over time and how they were affected by the Covid-19 shock. Figure 3 shows the evolution of the four concepts of unemployment considered between 2011 and 2020. The beginning of the sample

period (2011) shows the highest level of unemployment (17.2%), as it coincides with the aftermath of the Great Recession. By this year, however, the unemployment rate was already declining, driven by the rapid economic recovery: between 2010 and 2011, real GDP grew by around 6%, following the 15% contraction experienced during the Great Recession (2008-2009).

Comparing the traditional unemployment rate (U3) at the beginning of our sample period with broader measures of unemployment/underemployment already reveals the importance of considering a certain group of individuals who are not part of the official unemployment statistics but are nevertheless relevant for assessing the health of the labor market. In particular, the data reveal that the broader unemployment concept, U6, which includes marginally attached and discouraged workers, is 5 percentage points higher in early 2011 relative to traditional unemployment statistics (23.5% vs. 17.2%, respectively).

Figure 3: Beyond the Traditional Unemployment Rate, 2011-2020

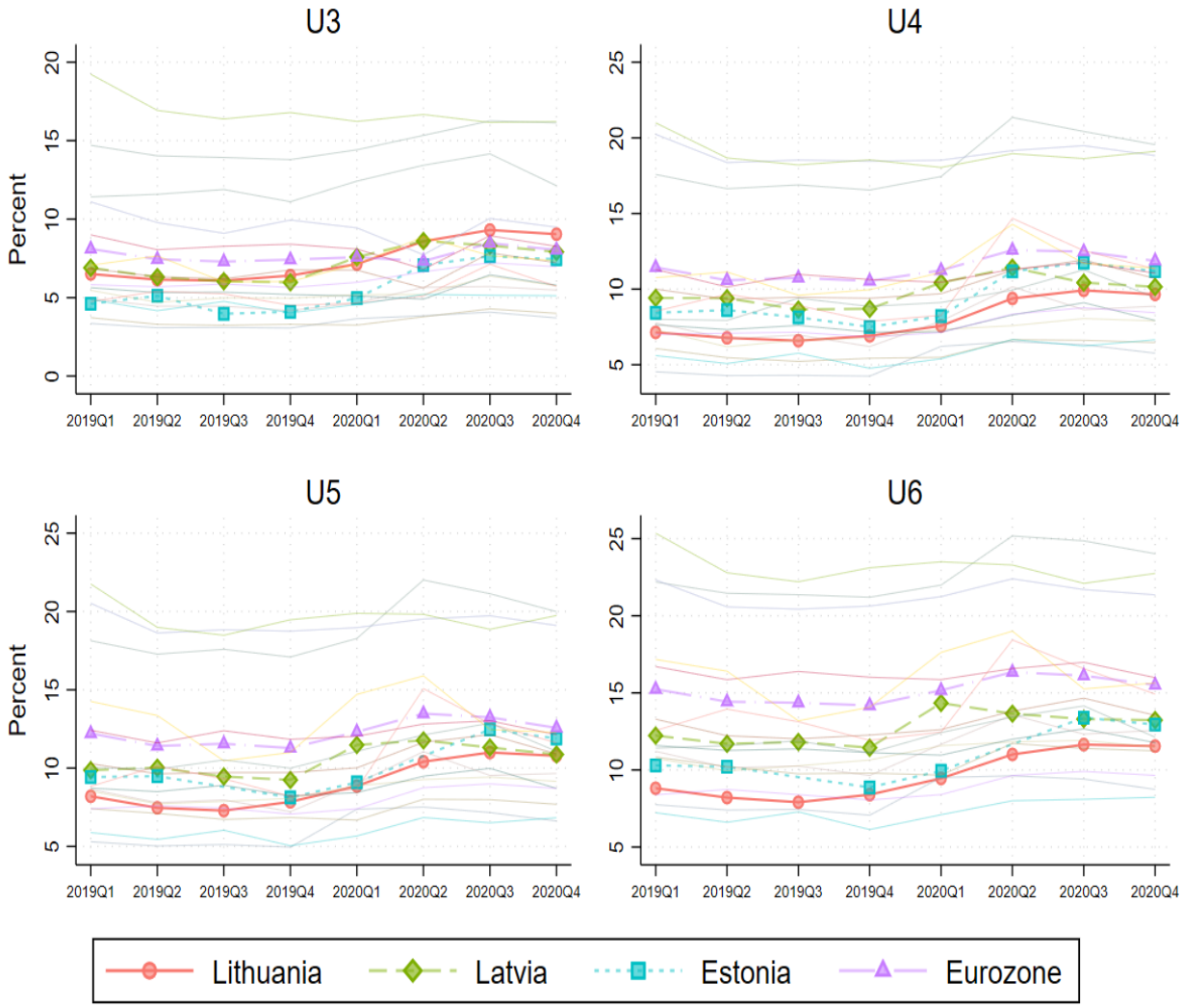


Source: Labor Force Survey and our own calculations. Notes: U3 refers to the traditional unemployment rate. U4 is the ratio of the unemployed plus discouraged workers to the active population plus discouraged workers. U5 is the ratio of the unemployed plus *all* marginal workers to the active population and *all* marginal individuals. U6 is the ratio of the unemployed individuals plus *all* marginally attached workers and the underemployed to the active population and *all* marginally attached individuals.

Interestingly, the difference between the standard unemployment definition and alternative measures which include different types of marginally attached workers is substantially smaller; 2.5 percentage points when considering *all* marginally attached workers (U5), and less than 1 percentage point if only discouraged workers are counted (U4). As the unemployment rate went down, fueled by economic growth, the differences between the official definition of unemployment and alternative concepts decreased, as more and better job opportunities appeared. In 2019, before the onset of the Covid-19 pandemic, the unemployment rate was about 6 percent and the difference with respect to U4, U5 and U6 was 0.1, 1.4 and 3 percentage points, respectively. This difference increased again in 2020, due to the Covid-19 shock. The increase was particularly

salient regarding U4 and U6. Workers who were (temporarily) fired due to Covid-19 should appear in U4, and workers who experienced a reduction in hours due to Covid-19 should appear in U6. The only workers affected by Covid-19 who are missing from these figures are people who indicated that they were not available for work and could not accept a job if it were offered to them. Given the prolonged school closures, there could be many parents who lost their jobs but are unable to return to work due to childcare. However, while the U4 indicator seems to begin decreasing by the end of 2020, U5 and U6 do not. This suggests that Covid-19 may have had an impact on the labor market beyond the extensive margin of employment.

Figure 4: Beyond the Traditional Unemployment Rate and Covid-19, Eurozone



Source: Eurostat and our own calculations. Notes: U3 refers to the traditional unemployment rate. U4 is the ratio of the unemployed plus discouraged workers to the active population plus discouraged workers. U5 is the ratio of the unemployed plus *all* marginal workers to the active population and *all* marginal individuals. U6 is the ratio of the unemployed individuals plus *all* marginally attached workers and the underemployed to the active population and *all* marginally attached individuals. Eurozone stands for the average across the 19 Euro countries. Light solid lines correspond to various Euro countries other than the Baltic states.

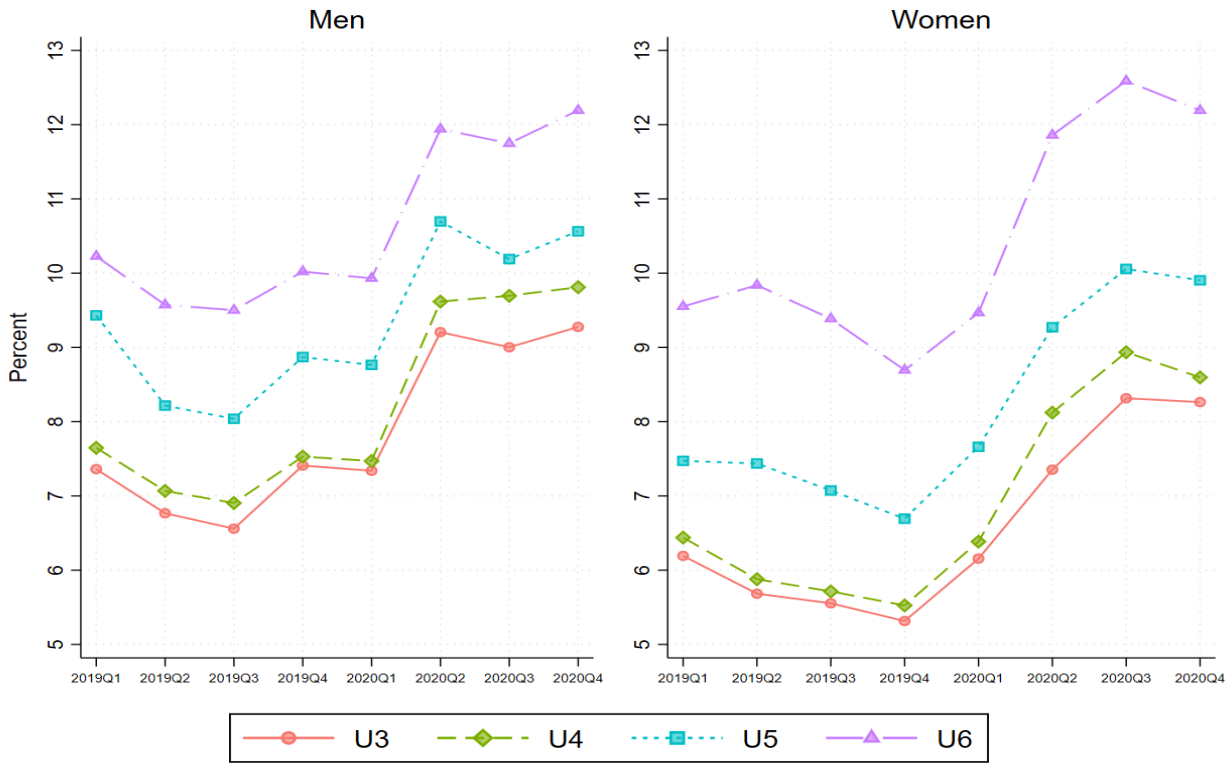
Our analysis above reveals an increase in unemployment (by any of the alternative definitions) driven by the impact of Covid-19 on the Lithuanian economy. To assess the relative magnitude of this increase, we look at

the quarterly evolution of unemployment and underemployment in Lithuania and other Euro countries between 2019 and 2020. Figure 4 presents our results, highlighting the comparison of Lithuania with Latvia, Estonia, and the Eurozone average.[3] The data show that, despite differences in levels, all countries experienced an increase in unemployment and underemployment. However, while the impact on the traditional unemployment rate was similar in all euro countries, a different picture appears when considering the alternative definitions under discussion. In the second quarter of 2020, when most of the blocking measures were put in place to contain the spread of the virus, the alternative definitions of unemployment show a strong increase that is not observed in the official unemployment rate. This is due to the governments' measures to preserve jobs in the face of the negative shock: large-scale subsidies to firms to be able to implement reductions in hours and temporary layoffs through short-time work or related schemes (Giupponi et al. 2021). Workers affected by these measures do not contribute to the level of the official unemployment, as they are either not looking for work or have only experienced an adjustment in hours. However, the increase in these rates has also been heterogeneous across countries, which is mainly explained by differences in their sectoral structure (Fana et al., 2020). For example, countries more dependent on hospitality services (or other types of activities where working from home is not an option) were relatively more affected than other countries. In this respect, Lithuania seems to have fared better than the latter type of economies and similarly to the Eurozone average, along with Latvia; Estonia, in contrast, showed a larger increase compared to its neighboring countries.

To provide a more nuanced picture of the impact of Covid-19 on the Lithuanian labor market, we now focus on unemployment and underemployment in different demographic groups between 2019 and 2020. We start our discussion by looking at gender. Figure 5 reveals interesting differences between men and women. First, except for U6 rates, every other measure of unemployment is lower for women. Second, the difference between U3 and U6 is much larger for women, probably reflecting the higher incidence of (involuntary) part-time employment among women (Green and Livano, 2017, Pech et al., 2021). Finally, Covid-19 had a larger negative effect on women's employment prospects, in terms of both unemployment and underemployment. This greater impact is in line with recent literature pointing out that, unlike previous recessions, the current economic downturn is particularly detrimental to women (Alon et al., 2021). The causes underlying this fact are both the composition of women's employment in different industries and occupations and the increase in childcare needs during school and kindergarten closures.

[3] For the sake of exposition, the rest of Eurozone countries are shown with light solid lines.

Figure 5: Beyond the Traditional Unemployment Rate and Covid-19, Gender

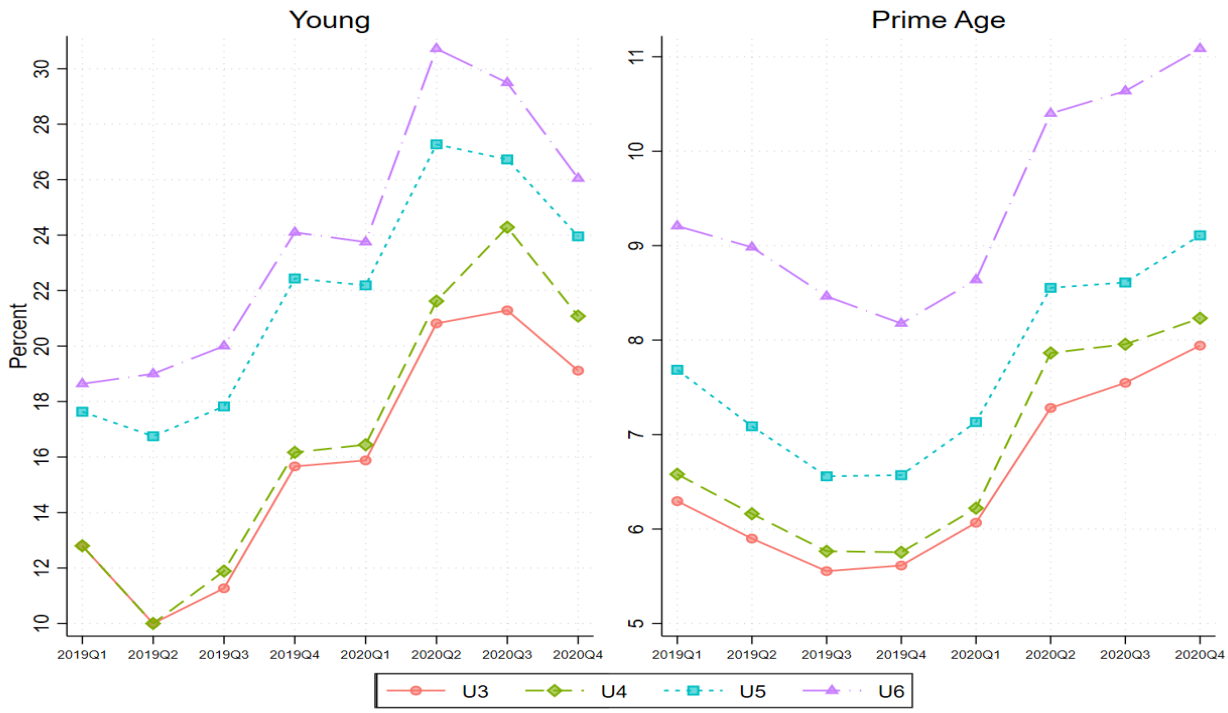


Source: Labor Force Survey and our own calculations. Notes: U3 refers to the traditional unemployment rate. U4 is the ratio of the unemployed plus discouraged workers to the active population plus discouraged workers. U5 is the ratio of the unemployed plus *all* marginal workers to the active population and *all* marginal individuals. U6 is the ratio of the unemployed individuals plus *all* marginally attached workers and the underemployed to the active population and *all* marginally attached individuals.

In Figure 6, we now turn to compare the fortunes of young and prime-age workers during Covid-19. As can be seen, young workers have a substantially higher unemployment rate than prime-age workers, consistent with cross-country data showing that young workers have unemployment rates double or triple those of prime-age workers (Bell and Blanchflower, 2011). In addition, young workers showed a trend of rising unemployment already before the Covid-19 crisis hit the Lithuanian economy. However, in the second quarter of 2020 the increase was sharper, coinciding with the first shutdown. In relative terms, prime-age workers fared relatively better, which is explained by the fact that a larger share of young workers were employed in sectors more exposed to closure, i.e., restaurants and catering services, where remote work is not an option (Fana et al., 2020). This is particularly visible when comparing lines U3 and U4, which include furloughed workers, as the two lines overlap almost perfectly, beginning to diverge from each other only at the onset of the pandemic-induced recession. Particularly striking is the acceleration in the U6 rate for prime age, which reflects an increase in underemployment, likely driven by the reduction of hours associated with lower levels of activity due to the restrictions to contain the spread of the virus. Interestingly, in the late 2020s unemployment and underemployment rates started to decline for young workers, while this was not the case for prime-age workers. Yet, according to Statistics Lithuania, the official unemployment rate for prime-age workers in the

second quarter of 2021 was already recovered and close to pre-pandemic values (6.4% in 2021Q2 vs 6% in 2019Q2).[4]

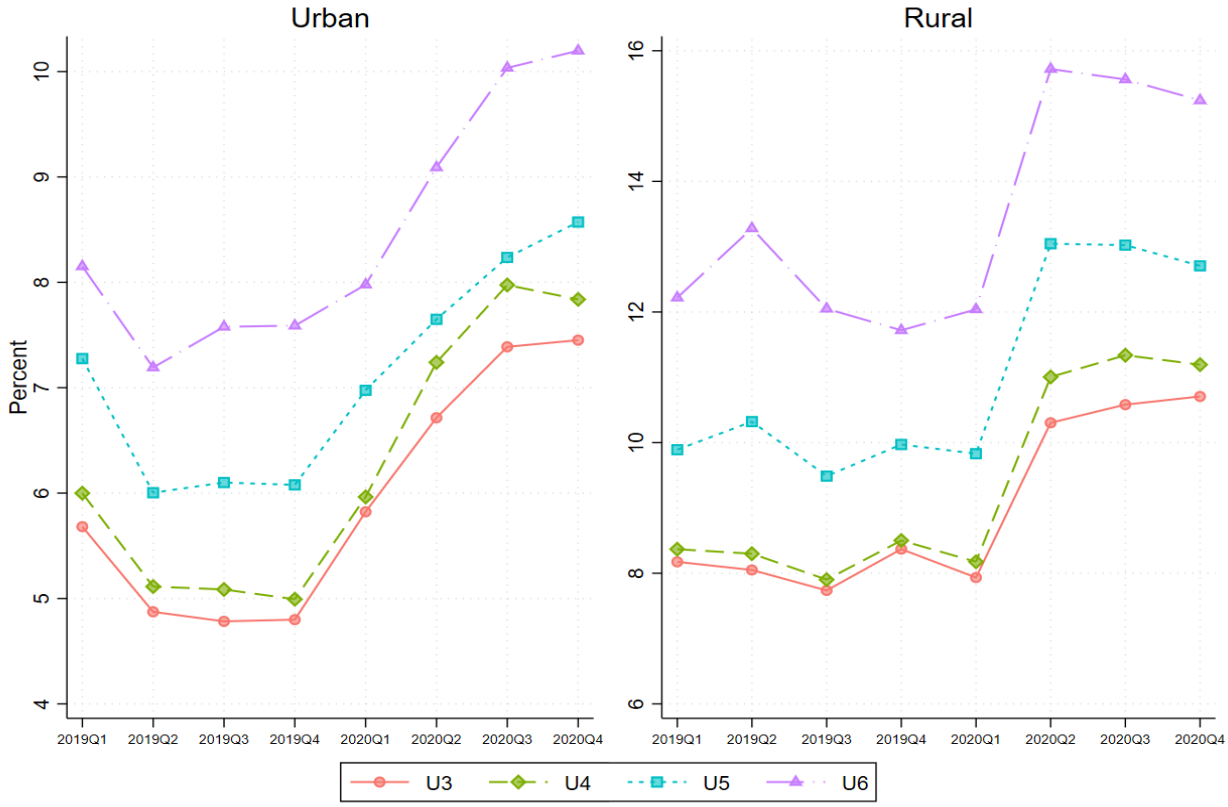
Figure 6: Beyond the Traditional Unemployment Rate and Covid-19, Age



Source: Labor Force Survey and our own calculations. Notes: Young (Prime Age) stands for individuals aged 15-24 (25-55). U3 refers to the traditional unemployment rate. U4 is the ratio of the unemployed plus discouraged workers to the active population plus discouraged workers. U5 is the ratio of the unemployed plus *all* marginal workers to the active population and *all* marginal individuals. U6 is the ratio of the unemployed individuals plus *all* marginally attached workers and the underemployed to the active population and *all* marginally attached individuals.

[4] See https://osp.stat.gov.lt/en/statistiniu-rodikliu-analize?hash=5864cef1-d50f-4e61-a1ea-f2cafc8cadd2 for the most updated data on the traditional unemployment rate across demographic groups. Unfortunately, the 2021 Labor Force Survey is still not available and, hence, we cannot document the alternative unemployment measures.

Figure 7: Beyond the Traditional Unemployment Rate and Covid-19, Location



Source: Labor Force Survey and our own calculations. Notes: Urban stands for the three largest cities in Lithuania (Vilnius, Kaunas, and Klaipeda). U3 refers to the traditional unemployment rate. U4 is the ratio of the unemployed plus discouraged workers to the active population plus discouraged workers. U5 is the ratio of the unemployed plus *all* marginal workers to the active population and *all* marginal individuals. U6 is the ratio of the unemployed individuals plus *all* marginally attached workers and the underemployed to the active population and *all* marginally attached individuals.

Finally, we provide evidence on the geographic heterogeneity of Covid-19. Figure 7 presents unemployment and underemployment rates between 2019 and 2020 separately for the largest three cities in Lithuania (urban areas), i.e., Vilnius, Kaunas and Klaipeda, and the rest of the country (rural areas). A couple of remarks are in place before focusing on the effect of Covid-19. First, unemployment or underemployment is substantially higher in rural areas compared to the largest three cities. Second, while the gap between the official unemployment rate and the extended version including discouraged workers is similar, the number of marginally attached individuals as well as underemployed workers is significantly higher in rural areas relative to urban areas. As for Covid-19, the data reveal that the urban unemployment rate increased by 2.7 percentage points, while the increase in rural areas was 2.3. Interestingly, although no large discrepancies are observed between the evolution of the extended unemployment measures, incorporating marginally attached types of individuals (U4 and U5), the increase in underemployment included in U6 was substantially larger in rural areas (3.5 percentage points) than in urban areas (2.6). This heterogeneity in the evolution of U3 and U6 between urban and rural areas may simply be a difference in their industrial composition, as well as in firm-level adjustment mechanisms, i.e., while firms in urban areas may rely more on the extensive margin of

adjustment (employment), those in rural areas may prefer to adjust the intensive margin (hours). Importantly, the unemployment rate in urban areas began declining in 2021, but as of the second quarter had still not reached pre-pandemic levels (6.5% in 2021Q2 vs. 5.3% in 2019Q2).

4. CONCLUSION

This report documents the impact of Covid-19 in the Lithuanian labor market using broader measures of unemployment which consider marginally attached individuals as well as underemployed workers. We follow the U.S. Bureau of Labor Statistics to calculate those indicators, using the quarterly Labor Force Survey conducted by Statistics Lithuania.

Our results suggest that the pandemic-induced recession has a milder impact on Lithuania, both compared to previous recessions and relative to other Eurozone countries. However, the relatively good performance of the national unemployment rate masks other negative aspects. On the one hand, we show a further increase in workers who are not actively looking for a job despite being available for work, individuals who are left out of the official unemployment statistics. On the other hand, we document an increase in the number of workers who are underemployed, meaning they would like to work more hours but cannot find those jobs. In addition, we found that the Covid-19 shock was more detrimental to women, younger workers, and residents of rural areas.

Taken together, our evidence suggests that policy makers and the general public should be aware that the lowest possible unemployment rate is not necessarily the most desirable outcome if it is the result of an increase in discouraged workers or lower job quality. Therefore, the measurement (and evaluation) of labor market performance should not be based exclusively on the unemployment rate but should be complemented by broader concepts that allow to quantify the size of unused human resources at both the extensive and intensive margin.

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