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Inequality in the Spanish Labor Market During the COVID-19 Crisis

By Ana Lariau and Lucy Qian Liu

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ABSTRACT: We analyze the differential impact of the COVID-19 crisis on the Spanish labor market across population groups, as well as its implications for income inequality. The main finding is that young, less educated, and low skilled workers, as well as women are the most affected by the COVID-19 shock in terms of job loss rates. The differential impacts were especially acute at the height of the pandemic in 2020 and remain robust after taking into account the heterogeneity of sector characteristics. Given that these vulnerable groups were positioned in the lower end of the income distribution before the crisis, we hypothesize that income inequality likely has increased due to the pandemic. Policies aiming at reducing inequality in the labor market need to go beyond measures that target the hardest-hit sectors and support the vulnerable groups more directly.

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WORKING PAPERS

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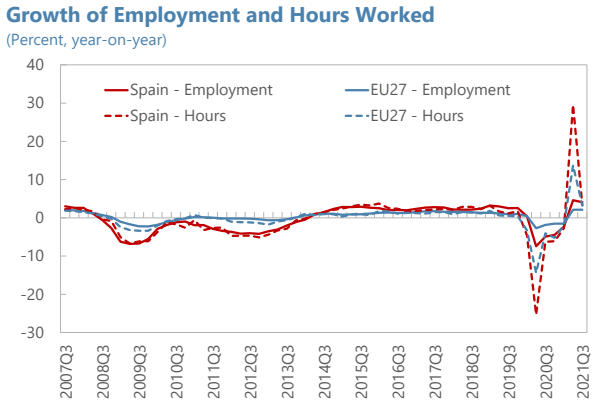
Contents

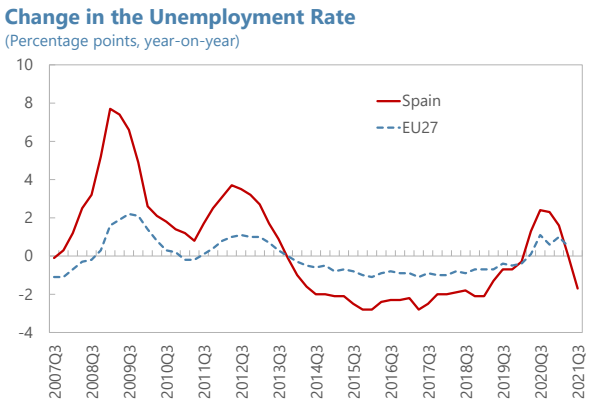
I. Introduction

The COVID-19 pandemic not only imposed a significant human toll in Spain but also had an unprecedented impact on the economy given the large share of the service sector, especially tourism, and the widespread use of temporary contracts. Both employment and total hours worked declined substantially in 2020, particularly in the second quarter, with magnitudes about twice as large as the EU27 average (Figure 1). While the contraction in employment was close to the level observed during the Great Financial Crisis (GFC), total hours worked fell much more sharply. The limited job loss was partly explained by the expansion of the *Expediente de Regulación Temporal de Empleo* (ERTE),[1] Spain's job retention scheme, but also by a temporary decline in the labor force participation, which was not evident in 2008–09. Consequently, the unemployment rate only rose moderately, in contrast to the outcome during the GFC, although the increase was still larger than the average of the region.

Figure 1. Spanish Labor Market During the COVID-19 Crisis



Sources: Haver Analytics and IMF staff calculations.



Sources: Haver Analytics and IMF staff calculations.

One key feature of the COVID-19 shock is its heterogeneous impact on labor market outcomes across demographic groups. The IMF April 2021 World Economic Outlook (IMF, 2021) reported that the pandemic impacted the youth and low-skilled more heavily. Moreover, unemployment among women rose more than men in some countries. One explanation for the uneven impact has been that these vulnerable groups are more likely to be employed in sectors that have been hit harder by the pandemic. This implies that policy measures that target the most affected sectors, such as Spain's successful ERTE program and public loan guarantees (IMF, 2020a), should limit the rise in inequality triggered by the crisis. If, however, the unequal labor market outcomes result from factors beyond the heterogenous sectoral impact of the shock, then additional policy efforts would be needed to mitigate the adverse effect of the pandemic on inequality.

This paper studies the differential impact of the COVID-19 crisis on labor market outcomes in Spain across different demographic groups, occupations, and sectors. Using individual-level data from the Spanish Active Population Survey, we estimate the probabilities of being unemployed or having reduced working hours for various demographic groups, while simultaneously controlling for job and industry characteristics. To

[1] For details of the institutional setup of ERTE and the modifications introduced in the context of the COVID-19 pandemic, see Annex VI in IMF (2020a).

demonstrate the effectiveness of the government's COVID-19 policy response, we also estimate the take-up rate of the ERTEs for workers with various individual and job characteristics. We then illustrate the impact of ERTEs in mitigating labor market inequality using a simple counterfactual analysis.

The key finding is that women, young, less educated, low-skilled, and immigrant workers faced a higher risk of being unemployed than men, older, better educated, and high-skilled workers, and Spaniards. The uneven impact of the COVID-19 crisis was most acute in 2020 and remained robust after controlling for job and sectoral characteristics. These results are consistent with those in related literature. The ERTEs, while successful at supporting the hardest-hit sectors, played a limited role in mitigating unequal labor market outcomes across population groups. These results imply that reducing inequality would require measures that directly support vulnerable groups, in addition to measures that target the hardest-hit sectors.

The paper also considers the likely implications of the COVID-19 crisis for income inequality by comparing the labor market risks of workers in each demographic group with their positions in the historical income distribution. We find that the groups more exposed to labor market risks were also positioned in the lower deciles of the pre-crisis income distribution. Therefore, the COVID-19 crisis likely has increased income inequality in Spain. While the income support programs implemented by the Spanish government (e.g. ERTEs, subsidies for self-employed, and Minimum Income Scheme) have mitigated this distributional impact, they may not have fully offset the impact of the pandemic on inequality.

The rest of the paper is organized as follows. Section II provides an overview of related literature. Section III documents stylized facts regarding the heterogeneous impact of COVID-19 on the Spanish labor market based on aggregate data. Section IV describes the methodology used in the microdata-based empirical analysis and summarizes the main findings. Section V discusses the implications of heterogeneous labor market risks for income distribution and inequality. Section VI concludes and outlines policy implications.

II. Related Literature

This paper contributes to a growing literature that analyzes the impact of the COVID-19 pandemic on the labor market. Many papers have studied the differential effects of the pandemic on labor market outcomes across various population groups. The main finding of the literature is that the pandemic had a disproportionately negative impact on the most vulnerable groups, particularly at the early stages when the health crisis was more severe and the containment measures were more stringent, contributing to an increase of pre-existing inequalities.

Using data from skills and job survey by the European Centre for the Development of Vocational Training (Cedefop) , Pouliakas and Branka (2020) argue that the COVID-19 crisis had a disproportionate impact on vulnerable groups—including women, older employees, non-natives, the lower-educated, those working longer hours and employed in micro-sized workplaces—given their higher exposure to social distancing risk. Eurostat (2020) estimate that the probability of losing the job during the COVID-19 pandemic is the highest for low-income earners and it is two-to-three times larger in Spain than in the rest of Europe. Adams-Prassl et al. (2020) find that job losses due to the pandemic in the U.K. and the U.S. were higher for women and less educated workers; while the gap in job losses across education levels is explained by the industry, occupation, and ability to work from home, the gap in job losses across genders persists even after controlling for these characteristics. Also for the U.K., Crossley et al. (2020) conclude that workers with precarious employment (contracts with no guarantee for a minimum number of hours), aged under 30, and from minority ethnic groups faced the biggest labor market shocks. In Italy, evidence suggests that low-educated workers, blue collars, and

low-income service workers were more likely to stop working and to suffer income losses due to the lockdown (Galasso, 2000). Similar evidence is provided by Gaudecker et al. (2020) for the Netherlands and by Alstadsæter et al. (2020) for Norway.

There is also an extensive literature studying this phenomenon outside of Europe, reaching similar conclusions regarding the heterogeneous effects of the pandemic on labor markets. For a broad set of advanced and emerging economies, Bluedorn et al. (2021) document a disproportionate decline of female employment during the COVID-19 crisis, but they find that the uneven impact was short-lived, heterogeneous across countries, and mostly driven by declining share of female employment within sectors (as opposed to cross-sector variations). Other studies on broader labor market outcomes include Albanesi and Kim (2021), Beland et al. (2020), Cajner et al. (2020), Cho and Winters (2020), Cortes and Forsythe (2020), Mongey et al. (2020), Montenovo (2020), and Shibata (2020) for the U.S.; Aum et al. (2020) for South Korea; Guven et al. (2020) for Australia; Bottan et al. (2020) for Latin American countries.

This paper also relates to the literature analyzing the impact of the COVID-19 crisis on income inequality. Some early studies, which mostly focus on the impact of lockdowns without accounting for the role of policy measures, provide evidence suggesting that wage inequality may have increased due to the pandemic. Palomino et al. (2020) simulate wage losses under various scenarios, based on different assumptions of teleworkability and essentiality of occupations, and predict an increase in inequality for Europe as a whole, driven largely by higher within-country inequality. Eurostat (2020) argues that the pandemic will likely increase inequality in EU, since individuals positioned in the lower end of the pre-crisis income distribution faced higher labor market risks (i.e. losing a job, being on temporary layoff, or having the working hours reduced), and thus a higher probability of experiencing income losses. Irlacher and Koch (2021) find that the COVID-19 crisis might have increased regional disparities in Germany given the sizable wage premium for workers performing their job from home—estimated to be over 10 percent—and the substantial regional variation in the share of teleworkable jobs. There is also evidence for the U.K. suggesting that the COVID-19 pandemic had a regressive impact in the sense that the households that experienced the largest declines in income were at the bottom of the pre-pandemic income distribution (Crossley et al., 2020).

However, many studies find that the governments' emergency support measures may have limited the negative impact of COVID-19 on inequality. For example, Hacioglu-Hoke et al. (2021) find that, in the U.K., individuals in the bottom quartile of the income distribution faced the largest earnings drop, but their total income fell by much less due to the increase in government benefits. Several papers, based on microsimulation models in the absence of high-frequency inequality data, also conclude that the increase in poverty and inequality due to the lockdowns at the early stages of the pandemic was largely mitigated by the government's stimulus measures (see Almeida et al. (2021) for the EU; Brunori et al. (2020) and Figari and Fiorio (2020) for Italy; Bronka et al. (2020) and Brewer and Tasseva (2020) for the U.K.; O'Donoghue et al. (2020) and Beirne et al. (2020) for Ireland; Li et al. (2020) for Australia).

Regarding Spain-specific evidence, Palomino et al. (2021) analyze the distributional impact of social distancing due to COVID-19 at the regional level and conclude that wage inequality (i.e. abstracting from income support measures) increased within and across regions in Spain. Using survey data, Martinez-Bravo and Sanz (2021) provide evidence that the income loss resulting from the pandemic was unequally distributed, with households in the lowest income quintile experiencing a twenty-percentage point larger income loss than those in the richest quintile, and women experiencing a three-percentage point larger income loss than men. Clark et al. (2020), however, find a decline in relative inequality (as well as in absolute inequality) in Spain—and also in Germany, Italy and Sweden—between January and September 2020, possibly due to the mitigating effects of policy response to COVID-19, which particularly benefitted individuals at the lower end of the income

distribution. Based on high-frequency bank records microdata, Aspachs et al. (2021) estimate that, absent government intervention, wage inequality would have increased significantly, mostly due to job losses and wage cuts experienced by low-wage earners. Nevertheless, the effective government support mitigated the increase in inequality, though less so among young people and foreign-born workers.

Our paper contributes the literature by providing an in-depth assessment of the distributional impact of the COVID-19 crisis for Spain. Through explicit controls of sectoral variations, we estimate within-sector labor market risks across different demographic groups and occupations. Our results highlight potential limitations of existing policy support that targets largely the sectors hit the most by the crisis.

III. Stylized Facts

This section presents stylized facts on the differential effects of the COVID-19 crisis on various groups, using the Spanish Active Population Survey data at the aggregate level. As shown in Figure 2, panel A, the decline in employment in 2020 was strongest for the young, for temporary and part-time employees, and for workers with low levels of education. Employment of workers under age 25 declined by nearly 15 percent on average in 2020, as opposed to an increase in employment among workers older than 55. Workers with a high level of education were virtually unaffected by the pandemic, whereas workers with low levels of education saw a decline in their employment of about 8 percent year-on-year. Across contract types, employment decreased the most for temporary employees, and to a less extent for those working part time. No major differences were observed across genders.[2] The patterns of labor market adjustment observed for Spain are similar to those for EU-27, with the exception of the impact on the young, which has been significantly larger in Spain than in the region.

In line with the fall in employment, the youth unemployment rate increased significantly more than the rise in the overall unemployment rate in 2020, while the opposite happened with the unemployment rate of the eldest (Figure 2, panel B). For the other groups, the increase in the unemployment rate was about the same as the overall unemployment rate. The same dynamic, though with smaller magnitudes, was observed for EU-27.

The limited increase in the unemployment rate in 2020 was partly explained by transitions of some workforce into inactivity. Figure 2, panel C, shows that the decline in labor force participation was also uneven across groups. The young and the low-skilled were disproportionately affected, in line with EU-27. No major gender differences were identified, neither in Spain nor in the region.

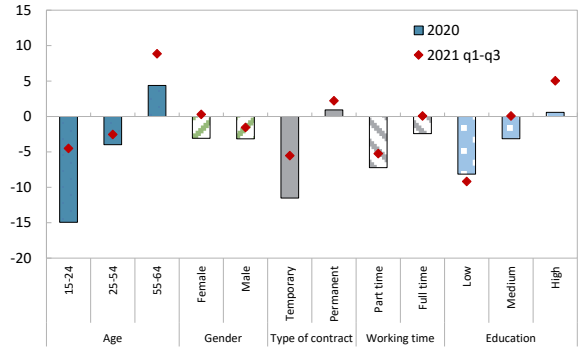
The negative 2020 impact on the hardest-hit groups was partially reverted in 2021. Nevertheless, by 2021:Q3, some key labor market variables still had not fully recovered to pre-crisis levels. In terms of employment, the recovery of youth and temporary employment in the first three quarters of 2021 was significant, but the level was still about 5 percent lower than in the same period of 2019. The situation of workers with low levels of education worsened, with employment falling even further in 2021 relative to 2019. Female employment recovered more strongly than male in 2021, surpassing pre-crisis levels. Employment in EU-27 countries displayed a similar pattern of recovery, albeit with different magnitudes.

[2] This is an unconstrained average across genders. The differential impact across genders emerges once we control for other individual and job characteristics, as seen in the empirical section.

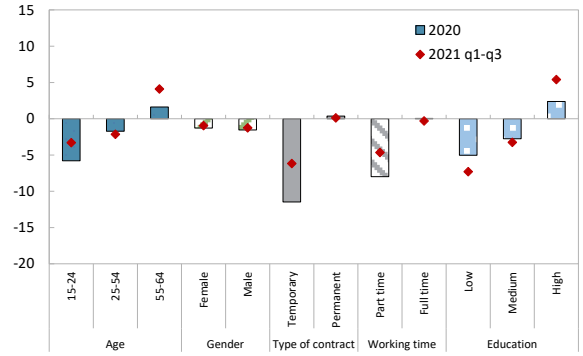
Figure 2. Impact of COVID-19 on Key Labor Market Variables Across Groups

A. Employment

Spain: Employment Growth
(Percent, relative to same period in 2019)

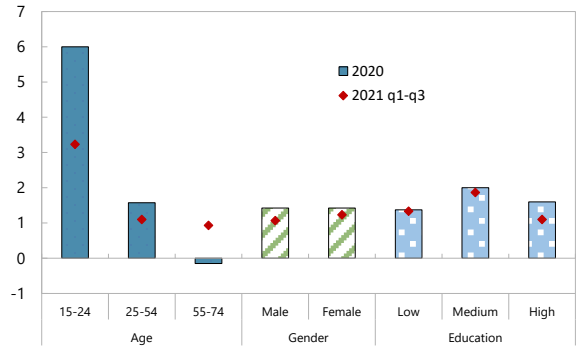


EU-27: Employment Growth
(Percent, relative to same period in 2019)

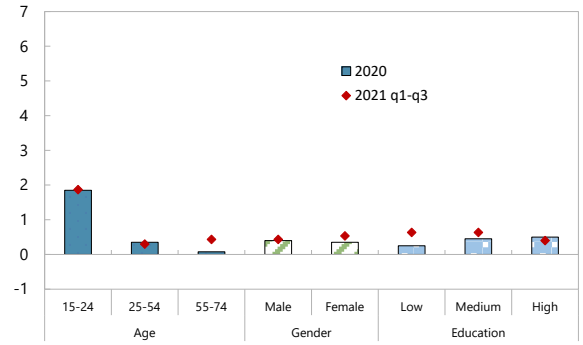


B. Unemployment

Spain: Change in Unemployment Rate
(Percentage points, relative to same period in 2019)

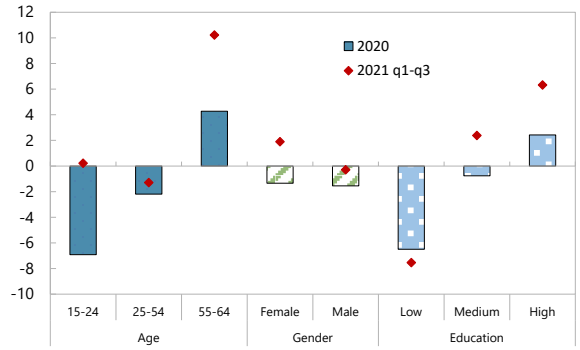


EU-27: Change in Unemployment Rate
(Percentage points, relative to same period in 2019)

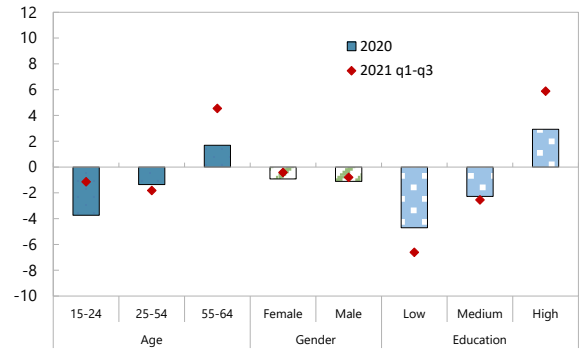


C. Labor Force

Spain: Labor Force Growth
(Percent, relative to same period in 2019)



EU-27: Labor Force Growth
(Percent, relative to same period in 2019)



Source: Eurostat and IMF staff calculations.

Regarding unemployment, the only group for which there was a significant recovery was the young, though the average unemployment rate was still 3 percentage points above the pre-crisis rate in 2021:Q1-Q3. The unemployment rate for the other groups remained broadly stable at around 1 percentage point above the 2019

average. The pattern was different for EU-27 countries as a whole, where the unemployment rate remained stable or even increased for some groups in the 2021:Q1-Q3.

The labor force participation was already above pre-crisis levels in the first three quarters of 2021 for most population groups. The recovery of the labor force was particularly steep for older workers, with a growth rate of about 10 percent in 2021:Q1-Q3 relative to same period in 2019. The exception were the low-skilled workers, for which the labor force declined even further in 2021; something similar was observed in EU-27 as a whole.

IV. Empirical Analysis

Data and Methodology

This section estimates the probabilities of being unemployed and the probabilities of being furloughed or having reduced working hours, at the individual level, in each quarter of 2020:Q1-2021:Q3, using the *Encuesta de Población Activa* (EPA) microdata published by the *Instituto Nacional de Estadística* (INE). The EPA is the Spanish labor force survey, published at a quarterly frequency as a set of repeated cross-sections (i.e., individuals are not tracked over time).

The empirical model follows the standard logistic regression, with the main independent variables including gender, age groups, education achievement levels, nationality, type of contracts, part-time/full-time, sectors, and occupations. To control for region-specific effect, we also include regional dummies in the regression. Let Y denote the binary outcome variable of being unemployed, furloughed or having reduced working hours, and p be the probability Y of being 1, $p = P(\mathrm{Y} = 1)$. Let X and Z be the vector of individual and job characteristics variables respectively, and D represents regional dummies. Then the logistic regression of Y on X, Z, and D is expressed in the following equation:

$$Log\left(\frac{p}{1-p}\right) = \alpha + \beta X + \gamma Z + \delta D + e.$$

The baseline regressions cover the period 2020:Q1–2021:Q3. Since the data include unemployed workers who lost jobs both before and during the COVID-19 pandemic, we use the following two strategies to illustrate the specific impact of the pandemic.[3] First, we estimate the same regression using 2019 data and compare the results to those from the 2020 and 2021 samples, which allows us to benchmark the COVID effects against asymmetric labor market outcomes during “normal” times. Second, we separate the sample that lost jobs since the end of 2020:Q1 from the rest of the unemployed using information on the duration of being unemployed. We then compare the risks of being unemployed since the end of 2020:Q1 across different groups, which provides a proxy for the effects of the COVID pandemic. To make a comparison with labor market outcomes in previous major crises, we also estimate the baseline model using data from 2008:Q3–2009:Q2 covering the peak period of the global financial crisis (GFC).

[3] Ideally one would use flow data to estimate the transition probabilities, which would capture the more precise impact of the COVID-19 crisis. Unfortunately individual-level flow EPA data is not publicly available.

Finally, we analyze the use of ERTEs in 2020 by regressing the probabilities of registering in ERTEs on individual worker's characteristics and job features.[4] To demonstrate the role of ERTEs in mitigating the impact of the COVID crisis, we conduct a counterfactual exercise to estimate the labor market impact of the pandemic in absence of ERTEs. More specifically, we construct a hypothetical sample by assuming that all workers registered under ERTEs with a suspended contract in 2020 are unemployed. We then estimate the baseline model using this constructed sample and compare the results with the baseline in 2020. The difference illustrates the role of ERTEs in mitigating labor market risks.

Results: Risk of Being Unemployed

Table 1 presents the results of the baseline model at the height of the pandemic. For each quarter of 2020, we estimate two specifications—one with individual characteristics only and the other with both individual and job characteristics (both controlling for region-specific effects). The results confirm that women, young, less educated, and foreign (people who do not have Spanish citizenship) workers faced a higher risk of being unemployed in 2020 than men, older and better educated workers, and Spanish citizens. The differential effects remain robust after controlling for sector and occupation variations, although most become smaller. These results indicate that heterogeneous sectoral shocks indeed presents a channel through which the pandemic affect the workforce differently, but the distributional impact across demographic groups was also present within sectors. Across sectors, the risk of being unemployed in 2020:Q2-Q4 was the highest for workers in agriculture, trade and hospitality, and arts, entertainment and other services sectors, which is in line with sectoral economic development. Among occupations, low-skilled workers, particularly low-skilled blue-collar workers, faced the highest probabilities of being unemployed.

Table 1. Marginal Effects for Probability of Being Unemployed vs. Employed, 2020

	(1) 2020Q1	(2) 2020Q1	(3) 2020Q2	(4) 2020Q2	(5) 2020Q3	(6) 2020Q3	(7) 2020Q4	(8) 2020Q4
Women vs. men	0.0687***	0.0261*	0.0728***	0.0364***	0.0751***	0.0356***	0.0703***	0.0230**
Below 25	0.375***	0.283***	0.402***	0.347***	0.381***	0.268***	0.406***	0.264***
25-44	-0.136***	0.0147*	-0.107***	0.0337***	-0.122***	0.0230***	-0.128***	0.0119
45 and above	…	…	…	…	…	…	…	…
At most lower secondary	0.174***	0.0460***	0.178***	0.0543***	0.171***	0.0519***	0.170***	0.0440***
Upper secondary	0.116***	0.0306***	0.120***	0.0347***	0.114***	0.0260***	0.118***	0.0261**
Tertiary	…	…	…	…	…	…	…	…
Foreigners vs. Spaniards	0.0623***	0.0165	0.0833***	0.0443***	0.0725***	0.0333***	0.0710***	0.0341***
Agricultre		0.0463*		0.0475*		0.0707**		0.0551**
Industries		-0.0292*		-0.0110		-0.0112		-0.0117
Manufacturing		-0.0394***		-0.0107		-0.0246*		-0.0143
construction		0.0127		0.0416		0.0203		0.0148
Trade and hospitality		0.0109**		0.0305***		0.0172***		0.0228***
Transportation and information		-0.0325***		-0.0158*		-0.0131		-0.0189**
Finance and other professional service		-0.0161***		-0.00729*		-0.00423		0.00239
Public services		…		…		…		…
Arts entertainment and others		0.0261***		0.0685***		0.0493***		0.0455***
High skilled white collar		…		…		…		…
Low skilled white collar		0.0399***		0.0409**		0.0240		0.0353**
High skilled blue collar		0.0255		0.0275		0.00738		0.0163
Low skilled blue collar		0.0926***		0.103***		0.0764**		0.0810***
Observations	134137	70516	125215	66114	124857	65368	125421	65409

Note: Marginal effect for factor variables is the discrete change from the base level. Results for region-specific effects are not shown.
* p<0.05, ** p<0.01, *** p<0.001

[4] This analysis is restricted to the 2020 sample only. The published 2021 EPA data does not include the variable that reports the reasons why a survey respondent worked less hours than usual in the reference week, which makes it impossible to identify the samples that were enrolled in ERTEs.

To illustrate the magnitudes of these differential effects, for example, the probability of being unemployed in 2020:Q2 for a young worker age below 25 is 34.4 percentage points higher than that for a worker who is older than 44, having the same demographic and education background, and working in the same sector and occupation. Similarly, everything else equal, the probability of being unemployed for a low-skilled blue-collar worker is 10.7 percentage points higher than that for a high-skilled white-collar worker.

Figure 3 presents the comparison of the baseline results under the extended specification with those estimated using the 2019 and 2021 samples. In general, the differential labor market outcomes for the vulnearble goups existed even before the crisis, but the magnitudes of these effects rose notably during the crisis in 2020:Q2–Q4 before falling below the pre-crisis levels in 2021 as the recovery took hold. The only exception is the risk of being unemployed for workers in the agriculture sector, which saw a decline in the relative probabilities in 2020:Q2–Q3, since agriculture was one of the least affected sectors during the pandemic. Among the hardest-hit groups, the risks of being unemployed increased the most for foreigners and workers in trade, hospitality, entertainment, and other contact-intensive service sectors during 2020:Q2–Q3, but these differential effects largely dissipated in 2021.

Figure 3. Probability of Being Unemployed by Hardest Hit Groups, 2019–2021

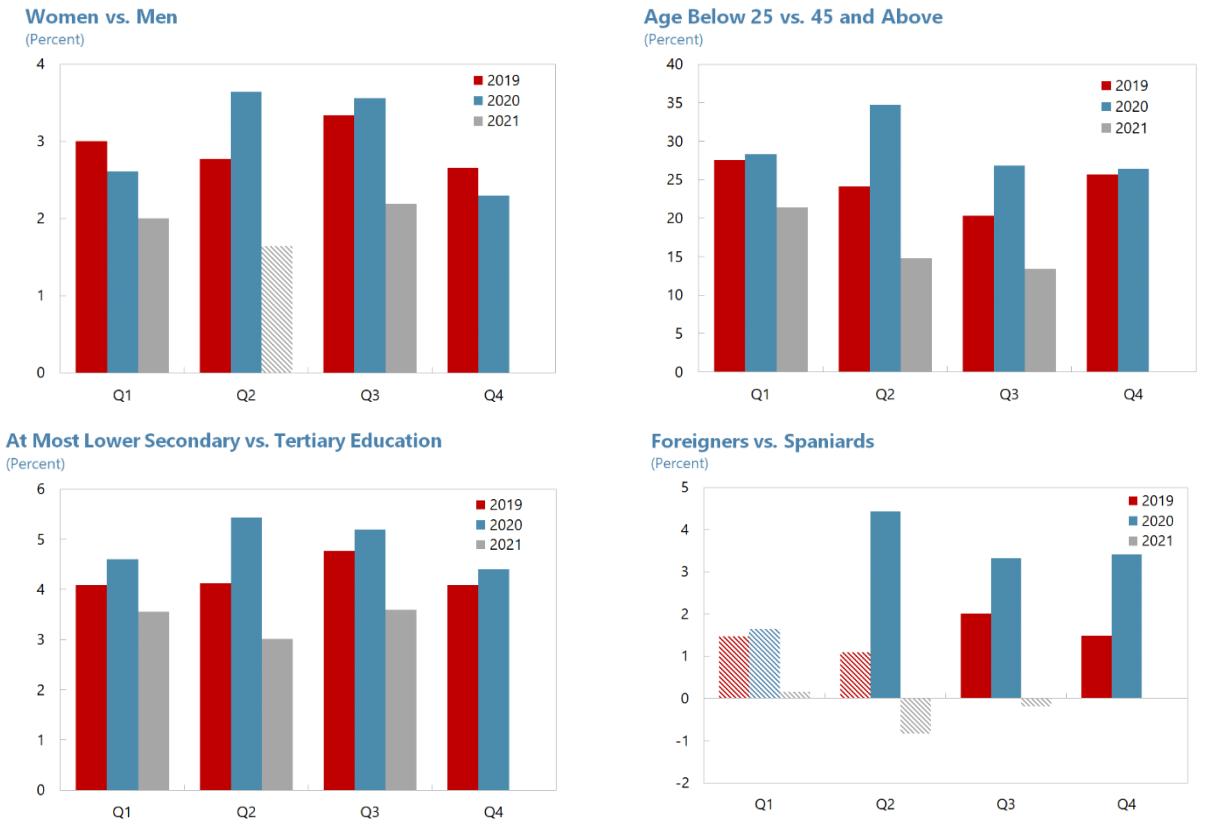


Figure 3. Probability of Being Unemployed by Hardest Hit Groups, 2019–2021 (concluded)

Sources: INE Encuesta de Población Activa and IMF staff estimation.
Note: Solid bars represent statistically significant estimates at <5 percent level. Shaded bars denote statistically insignicant estimates.

Table 2 reports the regression results for the sample of workers that lost jobs since the end of 2020:Q1. The overall findings are similar to those estimated using the full sample in Table 1 and Figure 3. Women, foreigners, young and less educated workers, as well as workers in trade, hospitality, entertainment and other service sectors were harder hit by the pandemic than other groups. The estimated sizes of the marginal effects, however, are generally smaller than those in Table 1, since the estimation is supposed to capture the direct effects of the COVID-19 crisis. In line with the findings in Figure 3, the differential effects for the hardest-hit groups were the strongest in 2020, but came down noticeably in the first three quarters of 2021 on the back of strong economic recovery. The recovery was particularly strong among immigrant workers, workers aged 25 to 44, and workers in sectors that were hit hardest by the pandemic in 2020.

Table 2. Marginal Effects for Probability of Losing Jobs During the COVID-19 Pandemic, 2020:Q1–2021:Q3

	(1) 2020Q1	(2) 2020Q2	(3) 2020Q3	(4) 2020Q4	(5) 2021Q1	(6) 2021Q2	(7) 2021Q3
Women vs. men	0.00203	0.0247***	0.0272***	0.0194*	0.0205*	0.0167	0.0219**
Below 25	0.0197***	0.200***	0.190***	0.257***	0.215***	0.148***	0.134***
25-44	0.00411***	0.0323***	0.0242***	0.0151**	-0.0224***	-0.0262***	-0.0282***
45 and above	…	…	…	…	…	…	…
At most lower secondary	0.00446***	0.0280**	0.0362**	0.0345**	0.0362***	0.0303***	0.0361***
Upper secondary	0.00313***	0.0183**	0.0168*	0.0241**	0.0279***	0.0237***	0.0238***
Tertiary	…	…	…	…	…	…	…
Foreigners vs. Spaniards	0.00350	0.0312***	0.0279***	0.0338***	0.00201	-0.00843	-0.00187
Agricultre	0.00973***	0.0323**	0.0627***	0.0546**	0.0338***	0.0313**	0.0416***
Industries	-0.000501	0.00550	-0.00565	-0.00785	-0.0173***	-0.0193***	-0.0252***
Manufacturing	-0.000569	0.0225***	-0.0140	-0.00895	-0.0114*	-0.0196***	-0.0209**
Constructions	0.00310	0.0428**	0.0199	0.0131	-0.00939	-0.0202*	-0.0205
Trade and hospitality	0.00442***	0.0329***	0.00682	0.0237***	0.00656	-0.00928**	-0.0182***
Transportation and information	-0.000852	0.00357	-0.0102*	-0.0158**	-0.0179***	-0.0164***	-0.0271***
Finance and other professional service	-0.00191***	0.00253	-0.00479	0.00276	-0.0112***	-0.0128***	-0.0226***
Public services	…	…	…	…	…	…	…
Arts entertainment and others	0.00328**	0.0534***	0.0330***	0.0425***	0.0169***	-0.000118	-0.000601
High skilled white collar	…	…	…	…	…	…	…
Low skilled white collar	0.00267	0.0198	0.0100	0.0313**	0.0123	0.00638	-0.00856
High skilled blue collar	0.000364	0.0181	0.00143	0.0121	-0.00399	-0.00299	-0.00868
Low skilled blue collar	0.00732***	0.0622***	0.0536**	0.0733***	0.0311**	0.0283***	0.0168*
Observations	61182	53697	60311	62543	57627	56662	55489

Note: Losing jobs during the pandemic is defined as losing jobs since end of 2020Q1. Marginal effect for factor variables is the discrete change from the base level. Results for region-specific effects are not shown.
* p<0.05, ** p<0.01, *** p<0.001

Results: Risk of Having a Suspended Contract or Reduced Working Hours

In the next exercise, we estimate the probabilities of being furloughed or having reduced working hours across different worker groups. The sample is restricted to individuals who have a job during the survey time, either working full time, with reduced hours, or being temporarily suspended.[5] The focus on the employed sample allows us to examine labor adjustment along the intensive margin (by working hours) that complements the baseline analysis on the extensive margin (by jobs) reported previously. Table 3 presents the results . While the probabilities of having a contract suspended or reduced working hours were higher for women than men in all quarters throughout our sample, the probabilities for young workers, foreigners, part-time workers, and temporary workers tend to be lower than their comparison groups, suggesting an over-reliance on the extensive-margin adjustment for these workforce groups. For less-educated workers and workers in trade, hospitality, transportation, entertainment and other service sectors, the adjustment along working hours was especially strong in Q2, potentially reflecting the intensive use of ERTEs (see more below). Nevertheless, these effects have largely receded since 2020:Q3, with many of these workers now facing lower probabilities of having a suspended contract or reduced working hours relative to their comparison groups . The rebound in working hours among workers in the contact-intensive sectors further reinforced the strong job recovery (extensive margin) among these workers seen in Figure 3.

[5] The sample is not restricted to workers registered under ERTE, as workers may have a suspended contract or reduced working hours for other reasons.

Table 3. Marginal Effects for Probability of Having Suspended Contracts or Reduced Hours, 2020:Q1–2021:Q3

	(1) 2020Q1	(2) 2020Q2	(3) 2020Q3	(4) 2020Q4	(5) 2021Q1	(6) 2021Q2	(7) 2021Q3
Women vs. men	0.0231***	0.0359***	0.0396***	0.0244***	0.0347***	0.0267***	0.0340***
Below 25	-0.0272	0.0112	-0.0726***	-0.0339***	-0.0184	-0.0474***	-0.0912***
25-44	0.00717*	-0.00154	-0.0219***	-0.00350	0.00759	-0.00415	-0.00704
45 and above	…	…	…	…	…	…	…
At most lower secondary	0.0180***	0.0421***	-0.0238***	0.0123	0.00289	0.00171	-0.0255**
Upper secondary	0.00793	0.0360***	-0.0140**	0.0144**	-0.00154	0.0119*	-0.00876
Tertiary	…	…	…	…	…	…	…
Foreigners vs. Spaniards	-0.0247**	-0.0119	-0.0414*	-0.0181	-0.0200	-0.0300***	-0.0636***
Temporary contract	-0.0240***	-0.0231**	-0.0922***	-0.0420***	-0.0417***	-0.0342**	-0.0810***
Part time	-0.0268***	0.0287	-0.0247***	-0.0405***	-0.0405***	-0.0331***	-0.0524***
Agricultre	-0.0265***	-0.0634***	-0.128***	0.00579	-0.00587	-0.00544	-0.117***
Industries	-0.0167***	0.0492***	-0.118***	0.00489*	-0.0381***	-0.0496***	-0.121***
Manufacturing	0.0148***	0.176***	-0.0565***	0.0198***	-0.0156***	-0.0120*	-0.0608***
Construction	0.00795*	0.0669***	-0.150***	0.00784***	-0.0387***	-0.0568***	-0.148***
Trade and hospitality	0.00372	0.216***	-0.0909***	0.0459***	0.0276**	-0.0172***	-0.147***
Transportation and information	-0.0238***	0.0636***	-0.0811***	-0.00617*	-0.0298***	-0.0296***	-0.123***
Finance and other professional service	-0.00715**	0.0332***	-0.0884***	-0.00127	-0.0345***	-0.0422***	-0.105***
Public services	…	…	…	…	…	…	…
Arts entertainment and others	-0.00683	0.134***	-0.122***	-0.0173**	-0.0226*	-0.0545***	-0.140***
High skilled white collar	…	…	…	…	…	…	…
Low skilled white collar	-0.00129	0.0488***	-0.0489*	0.0162	0.00532	0.0169***	-0.0450*
High skilled blue collar	0.0260*	0.0218	-0.0498***	-0.00360	0.00904	0.0216*	-0.0503**
Low skilled blue collar	0.00919	0.0317	-0.0515**	0.00456	0.0139	0.0352**	-0.0299
Observations	50660	45502	46693	47189	45063	44436	43427

Note: Marginal effect for factor variables is the discrete change from the base level.
* p<0.05, ** p<0.01, *** p<0.001

Figure 4 presents the comparison with 2019. Except for women, most vulnerable groups (defined as having the highest probability of being unemployed in the baseline) bore a lower probability of being temporarily laid-off or working with reduced hours than their comparison groups in normal times (as shown in the negative red bar in Figure 4). The lack of adjustment along working hours for vulnerable groups seems to be correlated with their higher likelihood of job losses found in the previous section. While these labor market outcomes could reflect both labor demand and supply factors, adjustments along the extensive margin often pose a higher welfare cost for workers than along intensive margin particularly in a labor market with sizeable firing and hiring costs. For the groups that saw a temporary increase in the probability of having a suspended contract or reduced hours in 2020:Q2, namely workers with at most lower secondary education and working in the sectors hardest hit by the pandemic, the question is whether these increases were due to policy actions that grant income subsidies or other reasons. In the next section, we analyze the use of ERTEs during the pandemic and its role in mitigating the distributional impacts of the COVID-19 crisis.

Figure 4. Probability of Being Furloughed or Having Reduced Hours, 2019–2021

Sources: INE Encuesta de Población Activa and IMF staff estimation.
Note: Solid bars represent statistically significant estimates at <5 percent level. Shaded bars denote statistically insignicant estimates.

Results: Impact of ERTEs

Table 4 reports the marginal effects for probability of being covered by ERTEs in 2020 across different worker groups.[6] Controlling for sectoral categorization, the probabilities of being enrolled in ERTEs were generally statistically insignificant or sometimes even smaller for young, less educated, and low-skilled blue-collar workers, as well as for foreigners and part-time workers (relative to their comparison groups). [7] It is worth noting that the take-up rates of ERTEs for workers under temporary contracts were generally smaller than those for permanent workers. For women, while the use of ERTEs temporarily increased in 2020:Q3, the differences in the likelihood of using ERTEs compared with men were statistically insignificant in 2020:Q2 and 2020:Q4. Similarly for workers with lower education level, despite the higher risks of being furloughed or having reduced hours in 2020:Q2, their chances of enrolling in ERTEs were either similar or smaller than those of more educated workers. In both cases, this would imply that the loss of income for these workers due to reduced working hours or furlough may not be compensated as in the case of enrolling in ERTEs.

Table 4. Marginal Effects for Probability of Being Covered by ERTEs, 2020

	(1) 2020Q1	(2) 2020Q2	(3) 2020Q3	(4) 2020Q4
Women vs. men	-0.000773	0.00288	0.00663**	0.00133
Below 25	0.00551***	0.0504*	-0.00348	0.00373
25-44	0.00482*	0.0145	-0.000156	-0.00231
45 and above	…	…	…	…
At most lower secondary	0.00123	0.0147	-0.00499***	0.00177
Upper secondary	0.00187	0.0206**	-0.00245	0.00439**
Tertiary	…	…	…	…
Foreigners vs. Spaniards	-0.00351	-0.000616	0.00640	0.00363
Temporary vs. permanent contracts	-0.00509**	-0.0139*	-0.0232***	-0.0186***
Part-time vs. full-time	0.00459	0.0331	-0.000187	-0.00533
Agricultre	0	-0.0210***	-0.00305***	-0.000844**
Industries	0.00576***	0.0814***	0.0192***	0.0176***
Manufacturing	0.0173***	0.205***	0.0373***	0.0369***
Construction	0.00837***	0.0645***	0.0109***	0.00711***
Trade and hospitality	0.0184***	0.239***	0.0550***	0.0673***
Transportation and information	0.00303***	0.0774***	0.0233***	0.0236***
Finance and other professional service	0.00193***	0.0591***	0.0187***	0.0154***
Public services	…	…	…	…
Arts entertainment and others	0.00873***	0.128***	0.0248***	0.0368***
High skilled white collar	…	…	…	…
Low skilled white collar	0.00414**	0.0236***	0.00827***	0.0149***
High skilled blue collar	0.00155	-0.00800	-0.00122	-0.000565
Low skilled blue collar	0.00371	-0.00729	0.00146	0.00219
Observations	48975	45502	46552	47051

Note: Use of ERTEs is defined as having a suspended contract or reduced working hours for the reason of being "en expediente de regulación de empleo". Results for region-specific effects are not shown.
* p<0.05, ** p<0.01, *** p<0.001

[6] As indicated in footnote 4, the analysis in this section is based on the 2020 sample only, since the published 2021 EPA data does not allow sufficient identification of ERTE workers.

[7] This does not mean that these groups did not receive ERTE benefits. In fact, foreigners and young workers were disproportionately represented in the pool of ERTE beneficiaries compared to their share in the overall social security affiliation. However, this is explained by the fact that foreigners and young workers were more prone to work in the hardest-hit sectors, which benefitted the most from ERTE. Once we control for the sector effect in the regressions, the ERTE coverage for these groups is not statistically significantly different than for other groups.

In the next exercise, we re-estimate the likelihood of being unemployed using a counter-factual sample that treats all workers who registered in ERTEs and had a suspended contract unemployed. Figure 5 shows the comparison of the differential effects estimated using the actual data and the hypothetical sample without ERTEs. Overall, the results suggest that the expansion of ERTEs mitigated the differential impact of the pandemic, particularly for the group of workers that had a higher chance of using this scheme, such as workers in the hardest-hit sectors. Nevertheless, the targeting effects on the traditionally more vulnerable groups—e.g. the young, the less educated and foreigners—were generally insignificant.

Figure 5. Probability of Being Unemployed, Counterfactual Analysis for Use of ERTEs

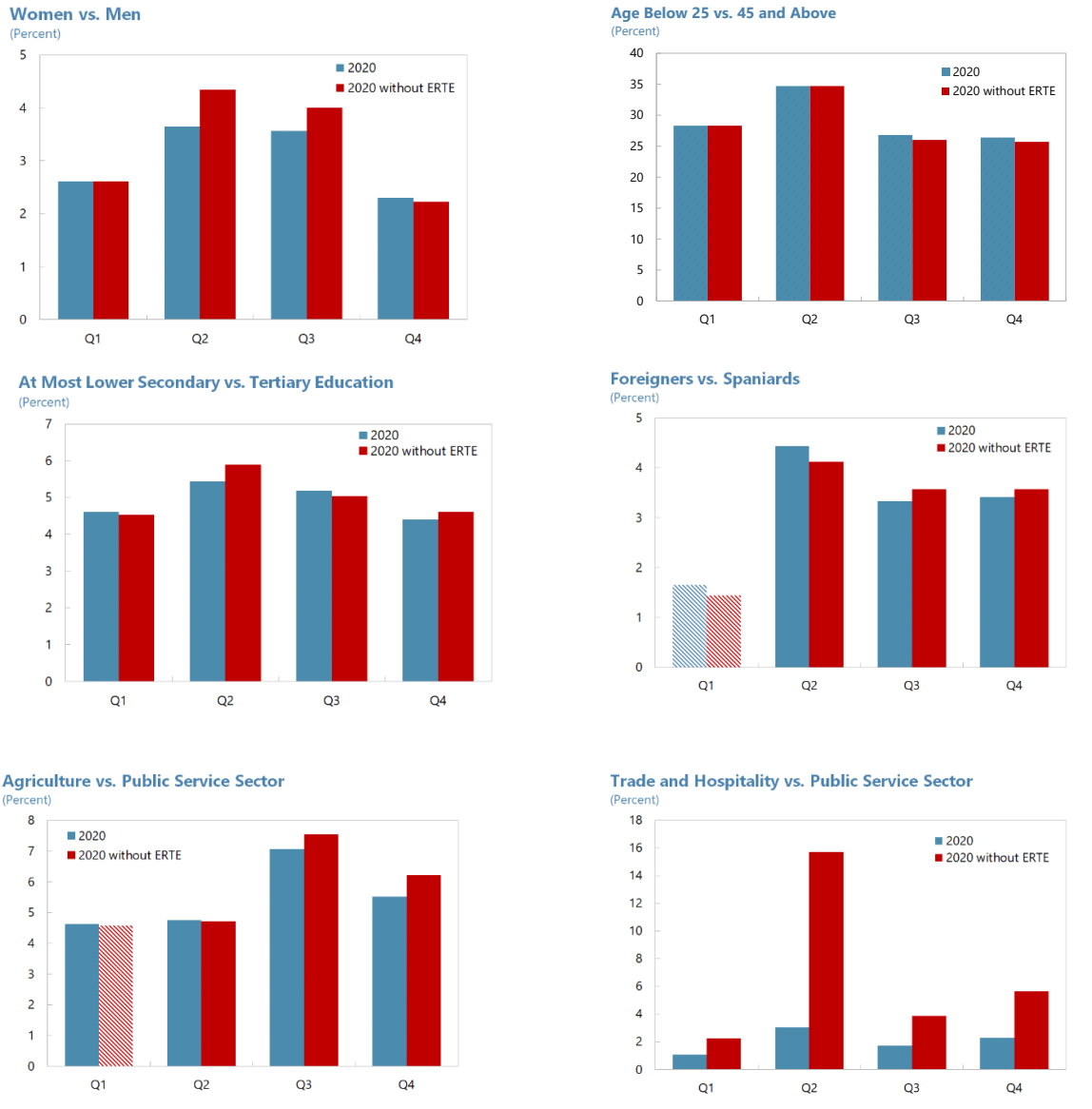
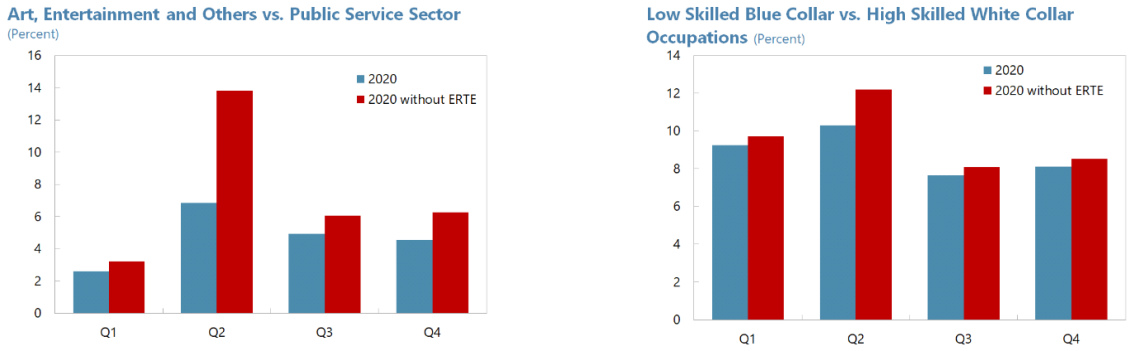


Figure 5. Probability of Being Unemployed, Counterfactual Analysis for Use of ERTEs (concluded)

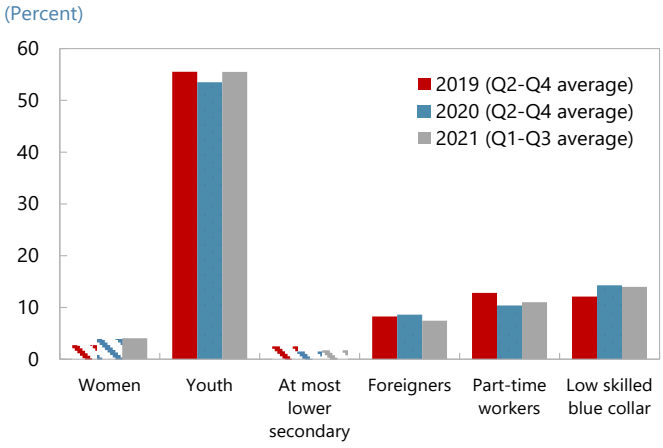


Sources: INE Encuesta de Población Activa and IMF staff estimation.
Note: Solid bars represent statistically significant estimates at <5 percent level. Shaded bars denote statistically insignificant estimates.

Results: Role of Temporary Contracts

The prelevant use of temporary contracts is one of the key features of the Spanish labor market, and has played a disproportionate role in labor market adjustment during past economic downturns (see more discussion in IMF, 2020b). As illustrated by the aggregate data in Section III, workers under temporary contracts suffered the largest job losses in this crisis. Given that workers under temporary contracts also had a smaller probability to be enrolled in the ERTEs and having reduced working hours (Table 4),[8] one may argue that temporary employment is another important mechanism through which the COVID-19 crisis had a disproportionate impact.

Figure 6. Probability of Being Under a Temporary Contract



Sources: INE Encuesta de población Activa (EPA) and IMF staff estimation.
Note: Solid bars represent statistically significant estimates at <5 percent level. Shaded bars denote statistically insignicant estimates.

[8] At the height of the pandemic, the Spanish government implemented measures preventing the termination of temporary contracts due to COVID-related reasons and promoting the inclusion of temporary workers in the ERTE scheme. Despite these efforts, the temporary contracts that expired during the pandemic, particularly those of very short duration, were unlikely to be renewed, leading to higher flows into unemployment of vulnerable groups that tend to have this type of contracts.

Due to data limitations,[9] our analysis cannot directly estimate the effect of temporary employment on the risk of job losses during the pandemic. Nevertheless, to illustrate the uneven distribution of temporary workers across the workforce, we estimate the probability of a worker being hired under a temporary contract for each demographic group while controlling for sectoral variations. The results confirm that younger workers, particularly those aged under 25, foreigners, part-time and low skilled blue collar workers indeed were more likely to be employed under a temporary contract (Figure 6), all else equal. These probabilities did not change much during the pandemic in 2020-21. Therefore, the uneven impact of the COVID-19 crisis could in part be explained by the different degree of reliance on temporary employment across demographic groups.

Results: Comparison with the GFC

Figure 7 presents the comparison of the labor market differential effects between the COVID-19 pandemic and the GFC, with both samples limited to the periods of the most acute shocks only.[10] On average, the relative risk of being unemployed for the young, foreigners, and workers in arts, entertainment and other service sector was higher in 2020:Q2-Q4 than in the GFC, whereas low-skilled blue-collar workers and workers in the construction sector faced a higher risk of being unemployed in the GFC. However, once restricting to the sample of workers who lost jobs during the crises, the difference in the relative risk of being unemployed for the young between the COVID-19 crisis and the GFC becomes insignificant. These results reflect the different natures of the two crisis: construction was the hardest hit sector in the GFC whereas the COVID-19 crisis has impacted the contact-intensive service sector the most.

Looking at adjustment along intensive margin, most of the vulnerable groups—except workers in the hardest hit sectors—had a lower risk of being furloughed or working with reduced hours than their comparator groups in both the GFC and the COVID-19 crisis, but the difference on average seems to be larger in the COVID-19 crisis. Overall, the average distributional effects of the COVID-19 crisis particularly when measured with the differential probabilities of losing jobs across various vulnerable groups were generally smaller than the distributional effects of the GFC. Part of the smaller distributional effects in the COVID-19 crisis can be attributed to the expansion of the ERTEs, particularly for workers in the hardest hit sectors by the pandemic.

[9] The published EPA microdata does not report data of past job history for the unemployed, and only reports the information on the type of contract for those individuals who have a job in the reference week.

[10] This sample selection for comparison is partially driven by the fact that the duration of the COVID-19 crisis is still unknown given the various waves of virus infections.

Figure 7. Labor Market Differential Effects, COVID-19 Pandemic vs. GFC

Sources: INE Encuesta de Población Activa and IMF staff estimation.
Note: COVID refers to the average of 2020Q2-Q4 and GFC is the period of 2008Q4-2009Q2. Solid bars represent statistically significant estimates at <5 percent level. Shaded bars denote statistically insignificant estimates. Sectors for the unemployed refer to the sectors where they worked previously and for the employed are their current sectors.

V. Implications for Income Distribution and Inequality

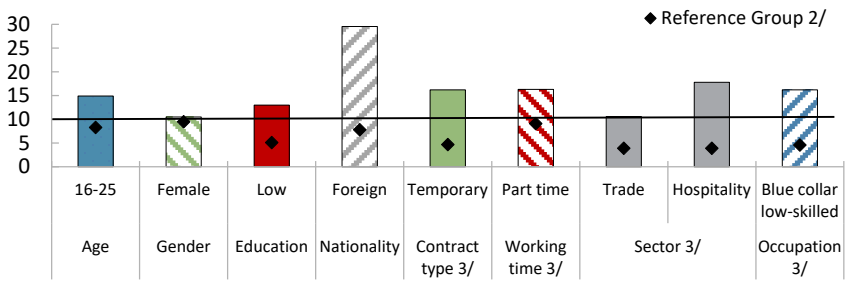
This section discusses the implications of the uneven crisis impact identified in the previous section on income inequality. We start by computing the income distribution for various groups in 2019 (latest income data available). Then we identify in what deciles of the income distribution the most vulnerable groups—i.e., those more exposed to labor market risks—tend to be positioned. Finally, we discuss about the potential impact on income inequality.

We compute the income distribution as the share of people by income decile per consumption unit for each group. If the share of a particular group in a given decile is greater than 10 percent, then this group is overrepresented in that decile. The groups classify the population by age, gender, nationality, level of education, part-time and full-time status, type of contract, economic sector, and occupation. The calculations are based on the microdata of the 2020 Living Conditions Survey published by the INE, which reports income data from the previous calendar year, i.e., 2019.

Figure 8 reports the income distribution by group in 2019. The chart shows that the young, women, foreigners and less educated individuals tend to be overrepresented in the lowest decile of income. Focusing only on those individuals who are employed, we find that people working part-time, with a temporary contract, in the primary sector, and with an elementary occupation tend to be concentrated in the lower end of the income distribution.

Figure 8. Share of Persons in the Lowest Income Decile per Consumption Unit and Group 1/

(percent, 2019)



Sources: Instituto Nacional de Estadistica and IMF staff calculations.
Note: The sample comprises individuals aged 16 years or older.
1/ The income per consumption unit is obtained by dividing the total household income by the number of consumption units, which are calculated using the modified OECD scale (weight of 1 to the first adult, weight of 0.5 to the remaining adults, and weight of 0.3 to persons under 14 years of age). Then the income per consumption unit is assigned to each of its members.
2/ The reference groups for each category are: '44 and older' for age; 'male' for gender; 'tertiary' for education; 'Spanish' for nationality; 'permanent' for type of contract; 'full time' for working time; 'public sector, health and education' for sector; and 'white collar high-skilled' for occupation.
3/ The sample for this group is also restricted to employed individuals.

These results suggest that the population groups identified as being more exposed to labor market risk—and thus to loss of income—in 2020, were also those positioned in the lower deciles of the income distribution in 2019. In other words, the COVID-19 pandemic may have had a larger impact on low-income earners than the rest of the population. Hence, it is likely that the COVID-19 pandemic has made the vulnerable groups even more vulnerable, widening existing inequalities. Such conclusion is consistent with early indicators reported by Ayala and Cantó (2022), who find that the number of households without income (based on data from the Active Population Survey), especially those with kids, increased significantly in 2020Q2. It is also consistent with the flash estimates of income inequality during 2020 reported by Eurostat, which point to a rise in the at-risk-of-poverty rate, particularly among the young, and of the income quintile share ratio.

It is important to highlight, however, that our analysis abstracts from the role of the emergency policy measures put in place by the government to cope with the pandemic. As discussed in Section II, such measures have had a positive effect in preserving job links, thereby mitigating the increase in income inequality. [11] Nevertheless, since the effect of government support on the traditionally more vulnerable groups, e.g. the young, the less educated and foreigners, was rather limited, income inequality in Spain is still likely to rise in 2020 due to the pandemic. However, the rise in inequality may prove to be short-lived as the economy recovers.

[11] Besides the role of support measures, there could be other factors that may be influencing inequality. For instance, there could be shifts in labor demand favoring specific population groups, particularly in the context of the ongoing automation and structural transformation. The lack of data prevents a thorough analysis of the role of such factors.

VI. Conclusions and Policy Implications

In this paper we analyze the differential impact of the COVID-19 crisis on the Spanish labor market, as well as its implications on income inequality. The main finding is that women, young, less educated, and low skilled workers are the most affected by the COVID-19 shock. These vulnerable groups were more likely to lose jobs during the pandemic, particularly at the height of the crisis, though less likely to face reduced working hours (except for women). The differential impacts remain robust after taking into account the heterogeneity of sector characteristics and were stronger in the early stages of the pandemic but became more moderate in 2021 when the recovery took hold.

Despite the strong policy response to the COVID-19 crisis, the magnitude of the distributional effects across demographic groups is broadly in line with the one observed during the GFC; the key difference between the two crises lies in the differential effects across sectors. While the COVID-19 crisis hit the contact-intensive service sector the most, workers in elementary occupations and the construction sectors faced a much higher risk of job losses during the GFC. Regarding income inequality, we hypothesize that it may have increased with the pandemic because the groups of workers more exposed to labor market risk and income losses were also positioned in the lower end of the pre-crisis income distribution; however, this increase might be short-lived as the economic recovery continues.

We also empirically examine the effectiveness of Spain's job retention scheme, ERTEs. We find that the ERTEs were successful in supporting the hardest-hit sectors—in line with the design of the scheme—but had limited reach specifically to vulnerable groups such as the young, the less educated, and immigrant workers. To the extent that the disproportionate effects of the COVID-19 crisis on the vulnerable groups remain significant even after controlling for sectoral variation, our findings suggest that the emergency support measures that primarily targeted the hardest-hit sectors were unlikely to be sufficient to offset potential increases in inequality.[12] Therefore, additional policy measures that directly support the most vulnerable groups may be needed to limit the scarring effects of the COVID-19 crisis. To this end, the minimum income scheme introduced in Spain in 2020, as well as the planned reorganization of non-contributory benefits contemplated in Spain's Recovery, Transformation and Resilience Plan, are welcome steps in addressing inequality.

It would also be desirable to (i) review the existing social safety net, including the unemployment benefits program, and upgrade the system as needed; (ii) modernize active labor market and education policies, particularly in the area of training, with a view to improving the employability of the young and low skilled; and (iii) boost family and childcare support and strengthen existing flexible work arrangements to further support the participation of women in the labor force. Reforms and investments in these areas are planned in the context of recovery plan, which started to be implemented in 2021.

Finally, structural reforms to overcome labor market segmentation—particularly the prevalent use of temporary contracts—would also be crucial for reducing labor market inequality. The approval of the labor reform by the end of 2021 is a step in this direction. While our paper is not able to provide an accurate estimate of the direct effect of temporary employment on labor market risks, the disproportional use of temporary contracts among the vulnerable groups, together with evidence of large decline in temporary employment at the aggregate level, provide an additional channel through which the COVID-19 crisis may impact the workforce differently. Future research that directly investigates the link between labor market segmentation and the distributional impact of the COVID-19 crisis will help inform further the policy debate in this area.

[12] Besides ERTEs, the government also adopted subsidies to self-employed and extended public loan guarantees.

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