

DISTRIBUTIONAL EFFECTS OF THE COVID-19 ON WAGES IN ITALY

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MOTIVATIONS

- The economic impact of the pandemic may disproportionately hit the most vulnerable segments of the population
- The economic impact of the adoption of working from home could be highly unequal among workers and sectors
- Italy is one of the countries most affected by the pandemic, as the early epicenter of the pandemic in Europe. As of October 2021:
 - *The total number of coronavirus (COVID-19) cases in Italy reached 14.8 million*
 - *The number of deaths was about 160 thousand.*
 - *The first Western country to adopt severe lockdown measures on March 11, 2020*
- Before the pandemic, Italy had the lowest share of teleworkers across European countries



AIM AND RESEARCH QUESTIONS

Aim:

- To investigate the short-run distributional effect of the COVID-19 pandemic on wages in Italy by using quarterly data in the time span from the first quarter of 2019 to fourth quarter of 2020

Research questions:

- What happened along the wage distribution during the (first wave of the) pandemic?
- To what extent can the real amount of working from home influence the wage distribution?
- Which economic sectors are suffering more than others?



MAIN CONTRIBUTIONS

- This paper is the first one to estimate the distributional impact both of COVID-19 pandemic and real working from home on wages in Italy
- It provides **new information on wage losses** among employees **along the wage distribution**
- It enables identifying the differential impact on wages by sector



LITERATURE

The economic literature that empirically investigates the effects of the COVID-19 pandemic on the labor market is developing and growing rapidly

- Wildman (2020): a significant positive correlation between income inequality and COVID-19 incidence in OECD countries
- Clark et al. (2020): a reduction in relative inequality between January and September 2020
- Angelov and Waldenström (2021): income inequality raised in Sweden during the pandemic because of layoffs and fewer working hours among low-income, part-time employees.
- Lemieux et al. (2020): half of job losses are related to workers in the bottom earnings quartile
- Casarico and Lattanzio (2020): a clear cut in hiring and an increase in the ending of temporary contracts. Young, temporary, and low-skill workers are more at risk of unemployment because of COVID-19



LITERATURE

The impact of the pandemic and the subsequent containment measures on the economy crucially depend on the Working From Home (WFH) ability of workers

- Palomino et al. (2020): under four different scenarios, an increase in the Gini coefficient from 3.5% to 7.3%.
- Delaporte and Pena (2021): both poverty and labor income inequality have gone up, and most of the income losses can be attributed to the sectoral and occupational structure of the economies.
- Adams-Prassl et al. (2020): workers unable to work from home have a higher probability of losing their job
- Bonacini et al. (2021): a positive shift in WFH capacity will favour older, high-educated, and high-paid workers



THE DATA

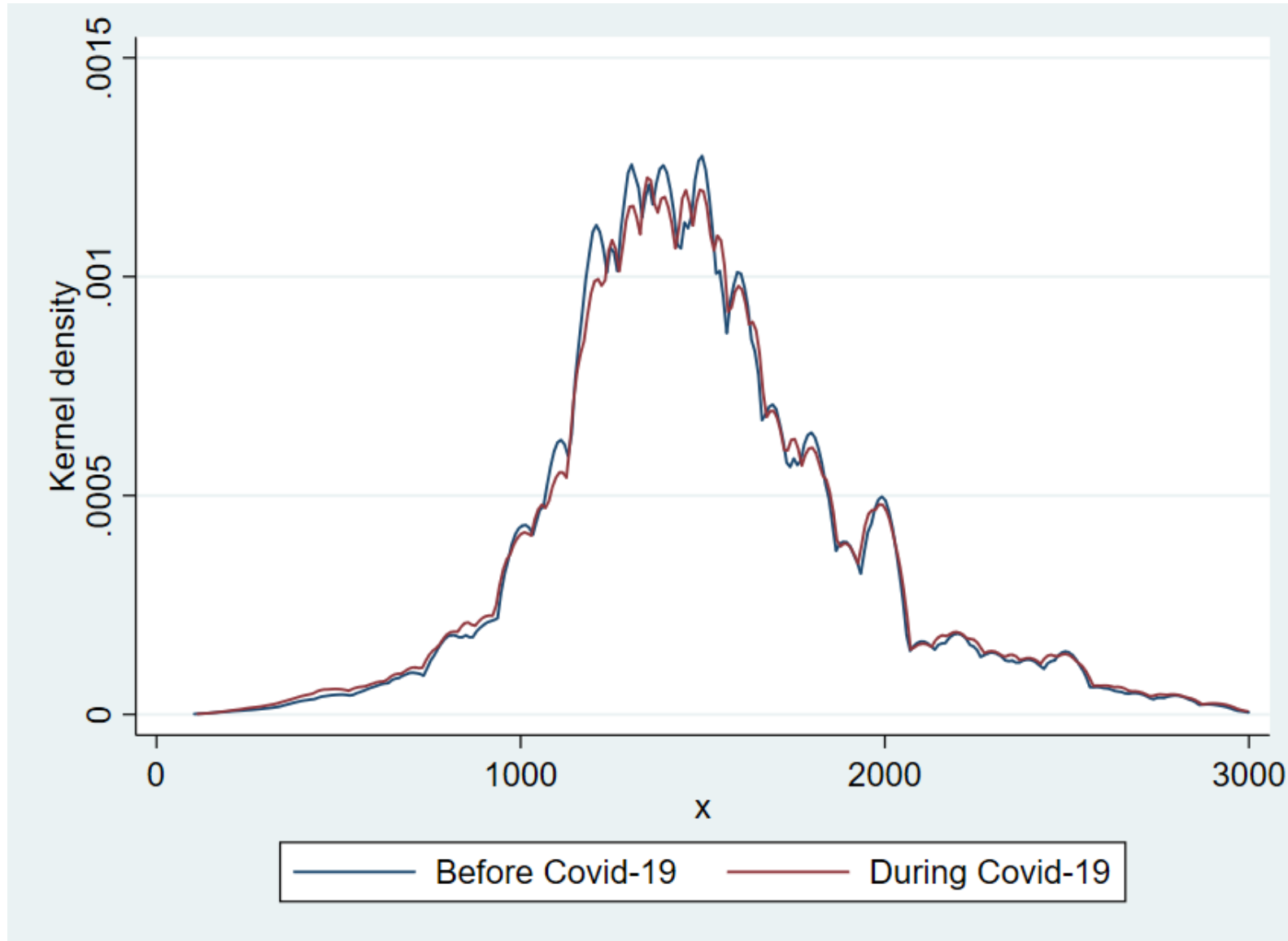
We use data from the **Italian Labour Force Survey**:

- Cross-sectional quarterly data (2019Q1-2020Q4) for the sample of individuals in the age interval 15-64: **649,282** observations
- Information on employment dynamics, individual characteristics, labour market variables, including the real Working From Home (WFH).
- Dependent variable: **monthly net wage of employees** (244,375 observations) in the respondent's main job, corrected for part-time.
- Main explanatory variables: **COVID-19, and WFH dummy variables**
- Control variables: gender, education, geographical area of residence, citizenship, marital status and household type, characteristics of the job (contract type, occupation, sector of economic activity (ATECO 2 digit))



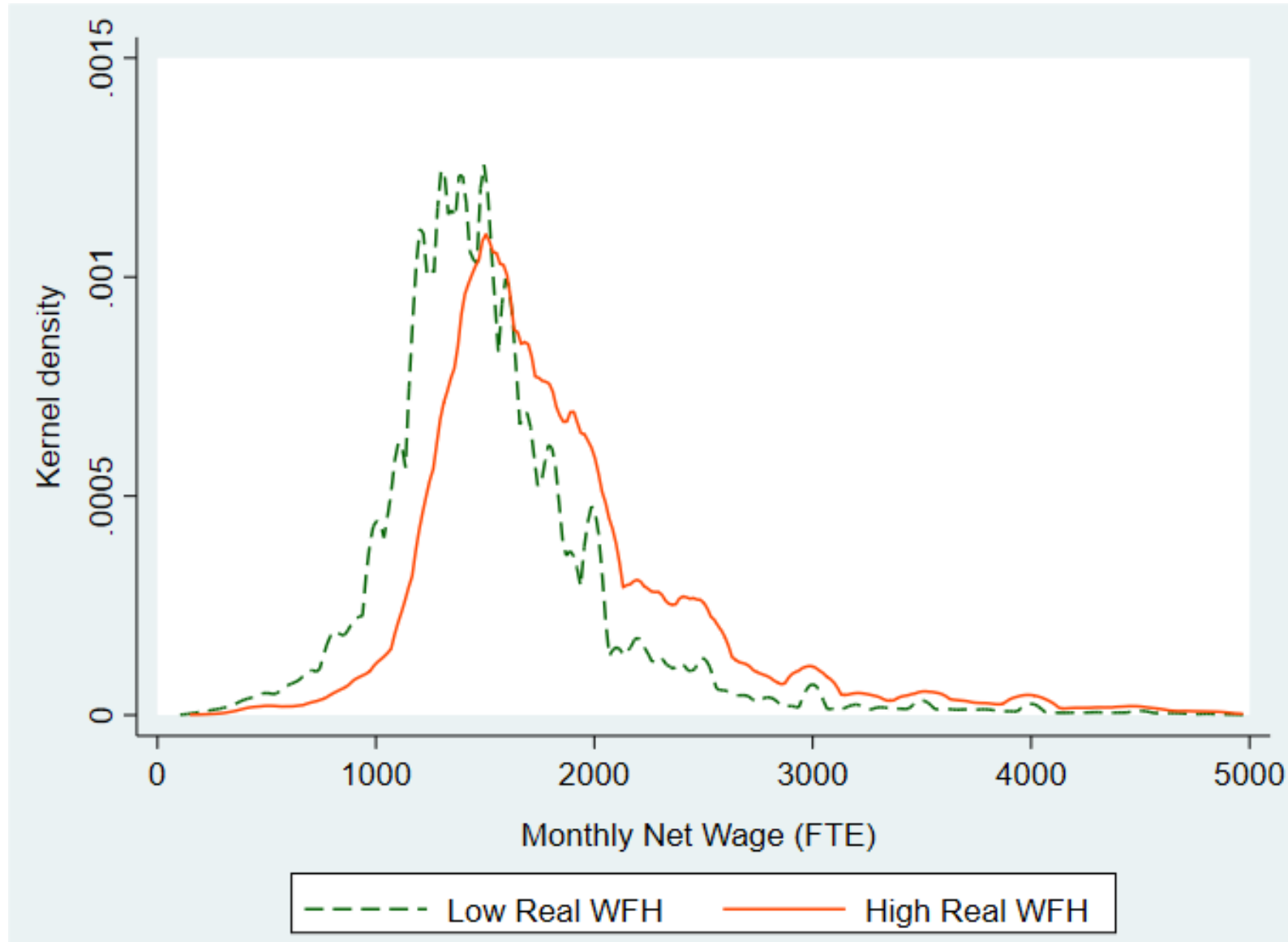
DESCRIPTIVE EVIDENCES

Wage distribution by periods (before and during Covid-19)



DESCRIPTIVE EVIDENCES

Wage distribution by level of WFH



ECONOMETRIC STRATEGY

The effects of exogenous variables on wages are likely to differ across individuals → The quantile regression (QR) approach (Koenker and Basset 1978)

$$\ln w_i = x_i \beta_\theta + u_{\theta i} \quad \text{with } Q_\theta(\ln w_i | x_i) = x_i \beta_\theta$$

$Q_\theta(\ln w_i | x_i)$ represents the θ th conditional quantile of (ln) wages given the vector x_i . Different specifications of the model:

- with and without the interaction between COVID-19 indicator and the sectors of activity (base model)
- with interaction between COVID-19 indicator and the real WFH measure

The estimates could be biased by a sample selection problem → two-stage estimation strategy (Heckman 1979; Buchinsky 1998)



MAIN RESULTS

	(I)			(II)		
	10th	median	90th	10th	Median	90th
COVID-19	-0.128***	-0.027***	-0.019**	-0.153***	-0.039***	-0.042***
WFH	0.041***	0.030***	0.015***	0.028***	0.036***	0.056***
COVID-19*WFH				0.013	-0.012	-0.053***
COVID-19*Agriculture				0.067**	0.008	0.024
COVID-19*Construction				0.004	-0.002	-0.007
COVID-19*Retail				-0.001	0.001	0.010
COVID-19*Hotel/Restaurant				-0.086***	-0.022***	0.037**
COVID-19*Transportation				0.027***	0.014***	-0.009
COVID-19*Communication				0.000	0.000	0.010
COVID-19*Finance and Insurance				0.028***	0.015**	0.021
COVID-19*Real estate				0.012	0.013**	0.040***
COVID-19*Public administration				0.035***	0.021***	0.027***
COVID-19*Education				0.055***	0.022***	0.021***
COVID-19*Other services				0.049***	0.029***	0.046***
Constant	6.396*** (0.045)	6.580*** (0.025)	6.684*** (0.050)	6.395*** (0.037)	6.582*** (0.024)	6.710*** (0.038)
N. of Obs.	244,375					



RESULTS FOR THREE SECTORS

	10th	Median	90th
		Industry	
COVID-19	-0.191***	-0.030***	-0.011
WFH	0.021	0.054***	0.044***
COVID-19*WFH	0.033	0.009	0.003
N. of Obs.	57,463		

Hotels and Restaurants

COVID-19	-0.308***	-0.121***	0.096
WFH	-0.024	0.030	0.014
COVID-19*WFH	0.143	0.087	0.040
N. of Obs.	9,321		

Public Administration

COVID-19	-0.003	0.037*	0.024
WFH	0.024	0.017	0.274***
COVID-19*WFH	-0.021	-0.019	-0.288***
N. of Obs.	17,233		



SUMMARY AND CONCLUSIONS

- Negative distributional consequences of the COVID-19 pandemic are more pronounced at the lowest quantiles of the wage distribution
- All economic sectors except finance and insurance have lower wage returns. Retail and hotel/restaurant sectors are the most affected during pandemic.
- On average workers that benefit from WFH receive a wage premium, and this is especially true for those at the bottom of the distribution.
- The pandemic affected the most workers up to the median wage distribution of industry and hotel/restaurant sectors, while the wage distribution of employees in the public administration benefited of the government measures introduced (i.e. WFH opportunities).



SUMMARY AND CONCLUSIONS

- Our findings suggest that the current crisis is exacerbating some of the pre-existing inequalities in the labor market, especially if effective regulation is not put in place.
- A massive contribution to finance policies in support of the groups most affected by the crisis to improve their labor market outcomes may come from the Next Generation European Union funds





THANKS FOR YOUR ATTENTION

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