

# Working from home and income inequality: risks of a 'new normal' with COVID-19

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- COVID-19 pandemic is raging worldwide and probably will not end in the short term
- The contagion speed seems to be also favoured by globalisation Zimmermann et al. (2020)
- Most governments decided to suspend many economic activities and restrict people's freedom of mobility
- Working from home (**WFH**) became of great importance since it allows:
  - To continue working
  - To limit the infection spread risk
- The literature neglects potential effects of WFH on the **income inequality**

## Before the COVID-19

- The WFH practice in Italy was definitely not widespread
- Was officially introduced in the Italian regulation through the Jobs Act of self-employment
- The regulation has been actually applied in very few cases.

## During the COVID-19

- 17 June, 90% of public sector employees were engaged in WFH during Phase 1
- 13 October, recommendation to promote the WFH

## After the COVID-19

Once companies and workers will incur significant fixed costs for remote work, it is likely that they will no longer want to go back (Brynjolfsson et al. 2020)

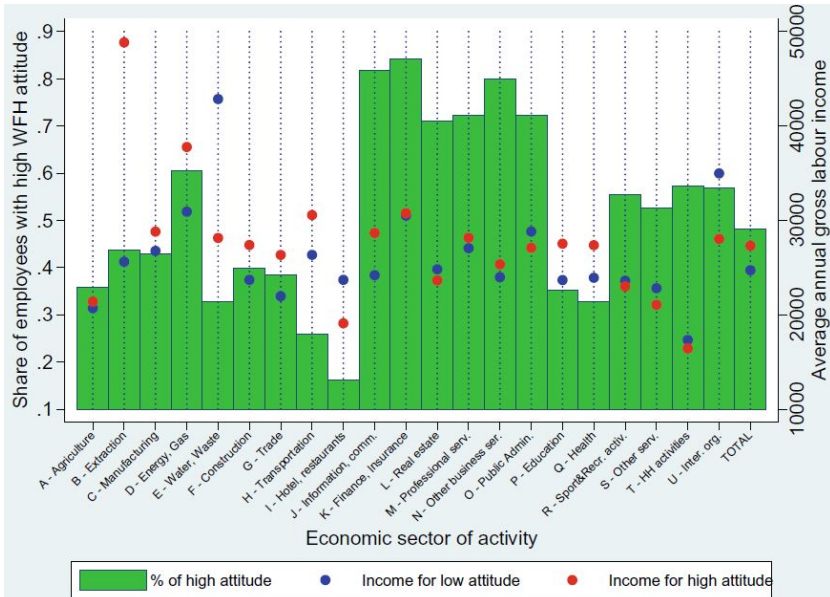
## Inapp-Plus 2018

- The analysis relies on data from the INAPP's Eighth Survey on Labour Participation and Unemployment (INAPP-PLUS 2018)
- Survey sample: 45,000 individuals aged 18-74
  - Age restriction (25-64)
  - A drop of people with no occupation
  - A drop of observations with missing values
  - A drop of self-employed
- The final sample consists of 14,307 individuals

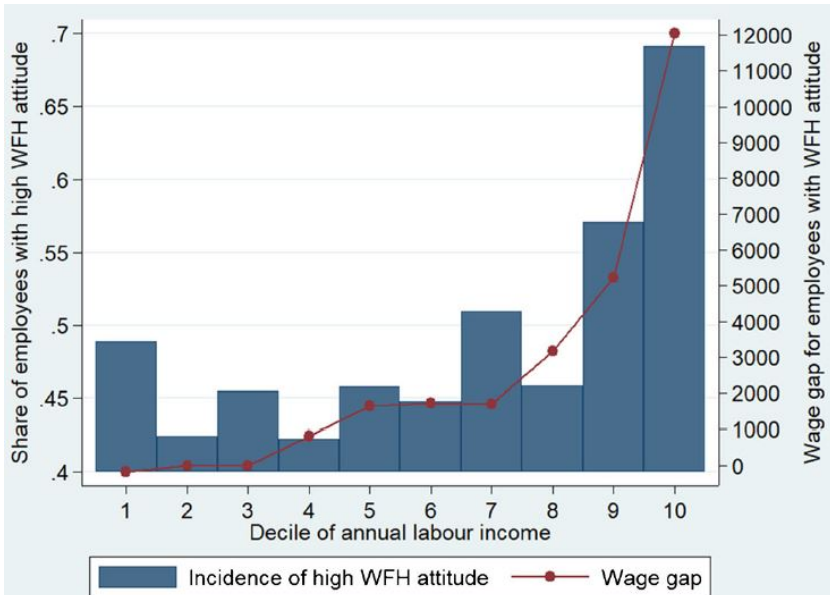
## ICP 2013

The survey reports information on about 16,000 workers and describes all the 5-digit occupations

# Descriptive statistics



# Descriptive statistics



We adopt the Unconditional quantile regression method (Firpo et al. 2009)

The unconditional quantile regression method involves the calculation of the recentered influence function (RIF)

$$\text{RIF}(y; v, F) = v(F) + \text{IF}(y; v, F) = v(F) + \lim_{t \downarrow 0} \frac{v((1-t)F + t\Delta_y) - v(F)}{t}$$

Where:

- $F$  is the distribution function of the outcome variable  $y$  (**gross labour income**)
- $v(F)$  denotes a distributional statistic
- $\text{IF}(y; v, F)$  is the influence function (Hampel 1974).

# Model specifications

We regress the RIFs:

- only on the variable of interest (**Unconditional Effect, UE**)
- on the variable of interest and a vector  $Z$  of relevant covariates (**Unconditional Partial Effect, UPE**)

We determine a marginal change in the distribution of the WFH feasibility swapping a **10 percentage points** share of employees from one feasibility level to the other one.

Where  $Z$  includes:

- demographic characteristics (*gender, age groups, education level, migration status, marital status, household size, presence of minors, municipality size, macro-region of residence*)
- job characteristics (*job contract, public servant, activity sector dummies*)



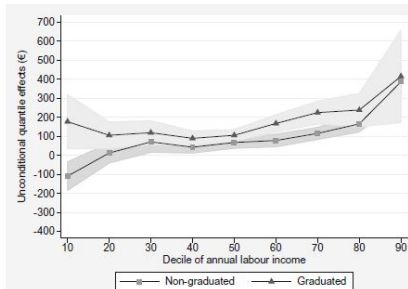
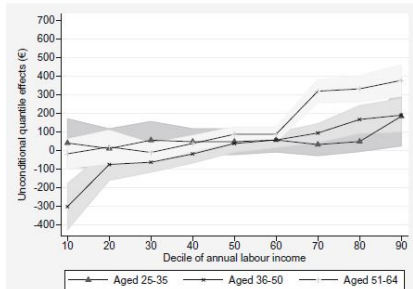
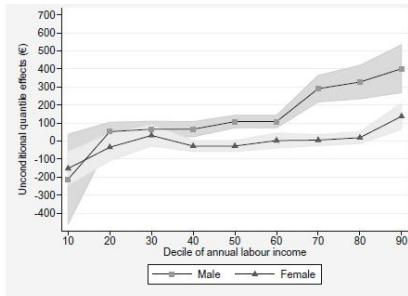
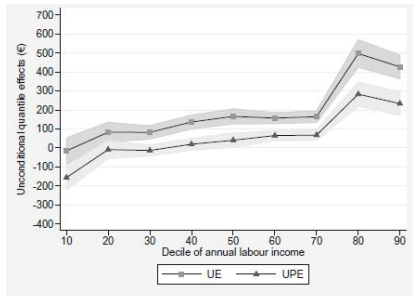
# Results

Group of employees	Mean value		Gini index	
	UE	UPE	UE	UPE
Total sample	258.86***	97.98	0.004**	0.004**
Male	473.03***	233.81**	0.004	0.004
Female	111.02**	- 33.66	0.002**	0.001
Aged 25-35	375.75***	270.60*	0.005	0.008*
Aged 36-50	24.07	- 82.64	0.001	0.001
Aged 51-64	496.39***	250.78**	0.007***	0.005*
Non-graduated	131.15	153.17*	0.003	0.003
Graduated	410.91***	167.95*	0.005***	0.000

Notes: Standard errors are clustered by NUTS-3 region and estimates are computed with individual sample weights. The table presents coefficients of the variable of interest (i.e. high WFH feasibility) only. Complete estimates for the pooled sample are provided in Appendix Table 9. Employees with high WFH feasibility level are defined as those reporting a value of the WFH feasibility index above the relevant sample median. UE estimates are based on a model specification that only includes the variable of interest, while for UPE estimates, additional covariates are included in the model (see Sect. 4)

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

# Results



# Robustness checks

1. We drop from the sample all part-time and temporary employees
2. We include in the sample self-employed individuals aged 25–64 years old
3. We replace the dummy specification of the WFH feasibility variable with a continuous one and with different quantiles specifications
4. We run RIF estimates on two different income inequality indexes: the mean log deviation and the Atkinson index
5. We change the set of covariates adopted for UPE estimates
6. We replicate all estimates in our main analysis without applying individual weights
7. We control for selection bias through an inverse probability weighting (IPW)

- Our results show that an increase in the WFH feasibility levels would increase the income inequality among employees
- In particular, this phenomenon would tend to advantage more:
  - Males
  - Older employees
  - Graduates
  - High-paid employees

# Policy suggestions

- Not all firms are able to invest and reorganise work remotely (Dosi et al. 2019; Cetrulo et al. 2019). We need new skills not only for workers but also for managers and entrepreneurs.
- Long-term interventions filling potential knowledge gaps are necessary, some suggestions:
  - Childcare facilities and financial support to households with children (Pouliakas 2020).
  - Increasing the school enrolment rate, that is correlated with lower differences in educational achievement among the population (Checchi 2006)
  - Improving the training courses, that would play an important role in reducing unequal distribution of benefits related to an increase of WFH opportunities (Acemoglu 1997).

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**THANK YOU  
FOR  
YOUR  
ATTENTION!  
ANY QUESTIONS?**



# Results

