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IMPLICATIONS OF AGEING FOR WORK, HEALTH AND CARE PROVISION: WHAT DO WE LEARN FROM THE SHARE DATA?

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Workshop in Honor of Franco Peracchi, 19 January 2014

Choice of Topics

- I chose topics that make use of the SHARE data and relate **to work done with Franco**
- During this work I did learn a lot from Franco:

  (i) to make efforts towards a rigorous approach,

  (ii) to think bout substantive issues,

  (ii) how to organize the coding and the data,

  (iii) the importance of asking oneself if the results are robust……..

To mention a few example of work done with Franco:

- Micro-modeling of retirement behavior in Italy. *In Social security programs and retirement around the world: Micro-estimation* (2004. pp. 345-398). University of Chicago Press.
- The length of working lives in Europe. *Journal of the European Economic Association*, 2005, 3(2-3), 477-486.

Choice of Topics

- By far the most challenging…..

REFORMA DE LA SEGURIDAD SOCIAL ITALIANA:¿ DEBEMOS CAMBIAR DE UN SISTEMA DE REPARTO A UN SISTEMA DE CAPITALIZACIÓN?. .....

CUADERNOS ECONÓMICOS DE ICE, 2000, (65), 171-216.

Three Topics (work in progress)

- (1) **Unequal Care provision** (by adults to their parents) – with Elena Bassoli
- (2) **Work Interruptions** and Medium-Term Labour Market Outcomes of Older Workers During the COVID-19 Pandemic - with Elena Buia, Ya Gao, Irene Simonetti
- (3) On the role of consensus in forming expectations (very, very preliminary) – with Julien Bergeot and Davide Raggi

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UNEQUAL CARE PROVISION:

EVIDENCE FROM THE SHARE-CORONA SURVEY

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QUESTIONS

- Who provides informal care?
- Substitutability **(complementarity)** between formal care and informal care
- Interaction between caring activities and **labour market** activities

CHANGES IN CARE PROVISION

- **Help and care given** to older people: we propose a mechanism through which the pandemic enhanced differences in the patterns of care provision.
- It is challenging to study "informal" care provision: very hard to disentangle the preferences for care provision from other drivers
- It is also very hard to relate "formal care" provision to "informal care" [evidence on SHARE data from Bonsang (2009); Kalwij, Pasini, Wu (2014)]
- Many studies find that women are responsible for most of the **unpaid care and domestic work** even in non-emergency cases (Bratti et al., 2015 and Fenoll 2020).
- We claim that there exists a **"reserve of informal care",** which is concentrated in some groups of the population.

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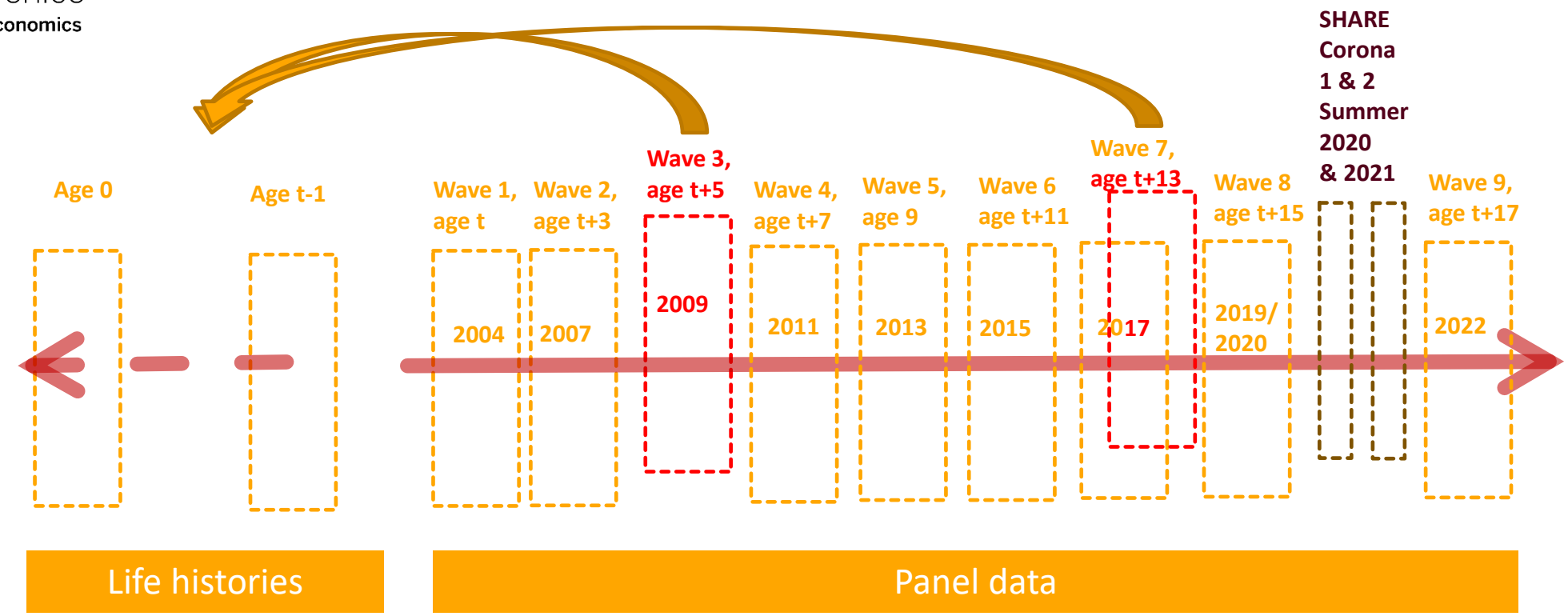
SHARE DATA STRUCTURE



- Longitudinal and retrospective data
- Cover income, wealth, health, social network, healthcare use, care given and received…
- Ex ante harmonization:

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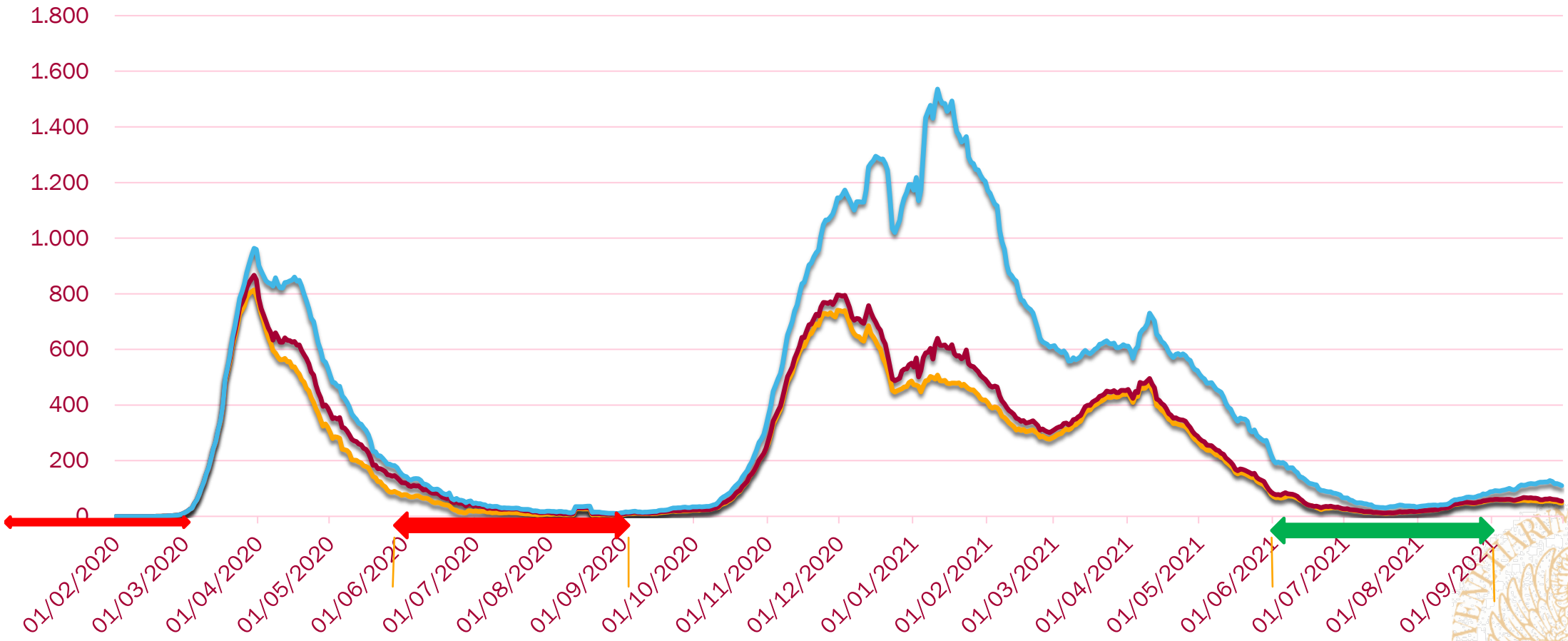
TIMING: SEVEN-DAYS MOVING AVERAGE OF COVID-19 DEATHS VERSUS SHARE FIELD-WORK



SHARE Wave 8

SHARE Corona Survey Wave 1

SHARE Corona Survey Wave 2

KEY POINTS

- More stringent anti-pandemic policies increase the likelihood of providing help to others for daily activities (outside the home). Hence make use of «strictness» of lock down policies

- Women and the “young old” individuals were more likely to provide help, even if working

- A possible substitution effect between formal and informal care to family members.

THE SAMPLE

- We combine the SHARE data regular waves (wave 8), both the SHARE Corona Surveys (wave 1 and 2) and the Oxford Government Tracker data
- The regular wave 8 provides the working status of the caregiver, the SHARE Corona Survey(s) supply the information about help and care provision during the pandemic, the Oxford Government Tracker gives the lockdown policies by country and day
- **A novel approach to measure** lack of care in the area [matching interviewers and respondents in the same area]
- We control for being eligible to retirement by using information at country-year level legislation (exploit variability in eligibility status to pensions Battistin, Brugiavini, Rettore, Weber 2009)
- Restrict to the group aged 50-70

GIVING HELP/PROVIDING CARE

We are looking at adult people (age 50 and over) providing care to individuals outside the home (parents, relatives and friends).

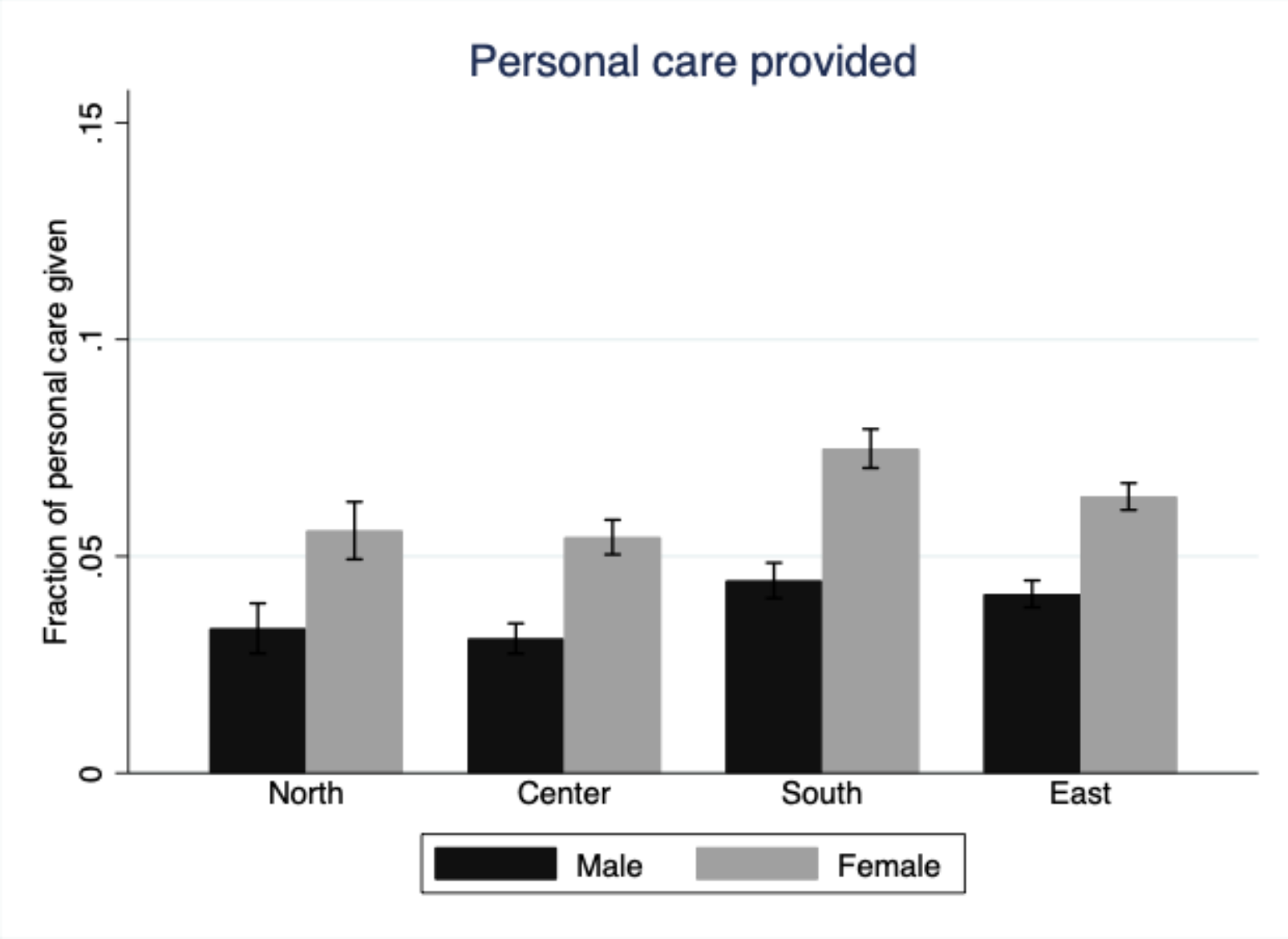
- **HELP**

“Since the outbreak of Corona, did you help others outside your home to obtain necessities, e.g. food, medications or emergency household repairs?”.

- **PERSONAL CARE**

“Since the outbreak of Corona, did you provide personal care to people outside your home?”.

PREVALENCE OF RESPONDENTS PROVIDING CARE IN EUROPE



A NOVEL USE OF THE STRINGENCY INDEX

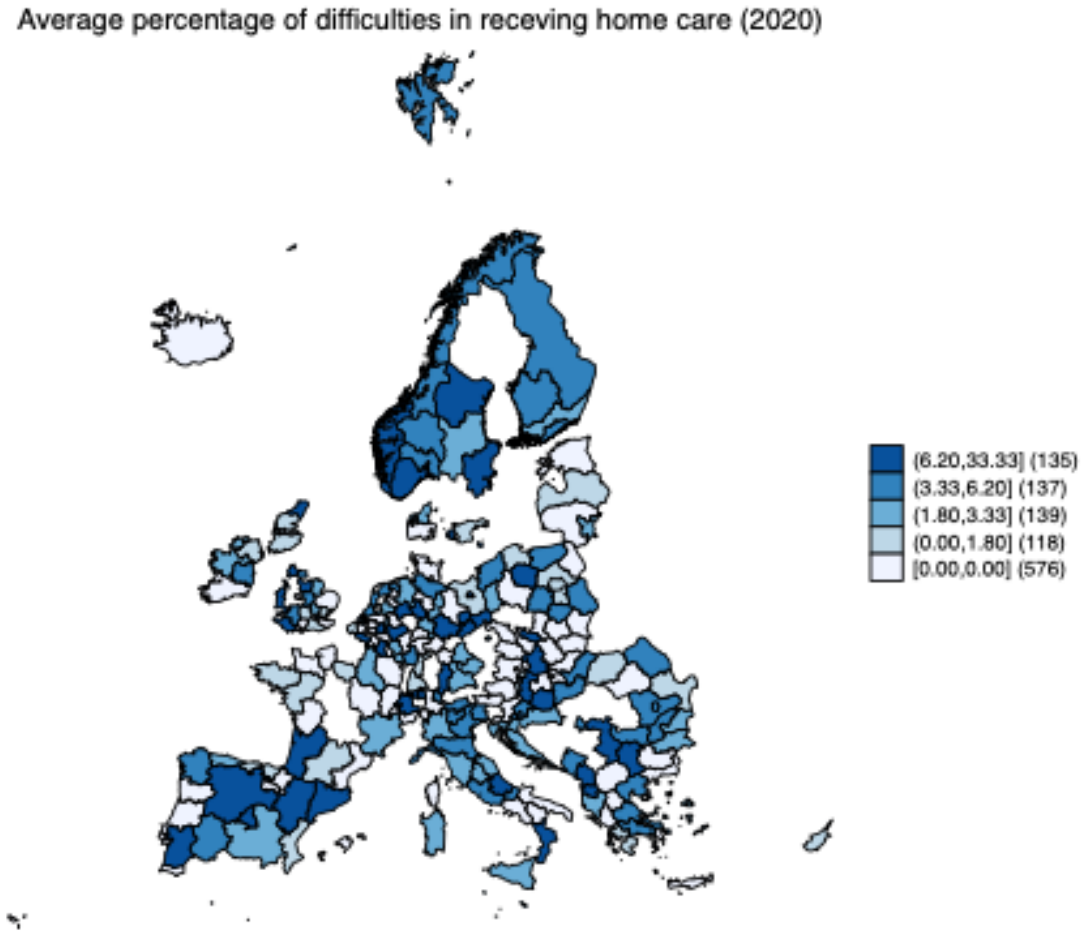
- The **Stringency index** tracks and "combines" on a daily basis: school closures, workplaces closure, canceling of public events, restrictions on gatherings, closure of public transports, "stay at home" requirement, restrictions on local travelling, international travel controls for each SHARE-Country.
- It measures the degree of severity, the S-Index ranges from 0 to 100, with greater values associated with greater strictness.
- We construct a "cumulated Index" based on the exposure to the policy.
- As in Bassoli, Brugiavini and Ferrari (2021), we match each respondent to the stringency index of her country of residence on that day, and also capture the cumulative exposure to the stringent policies experienced from the beginning of the Pandemic wave.

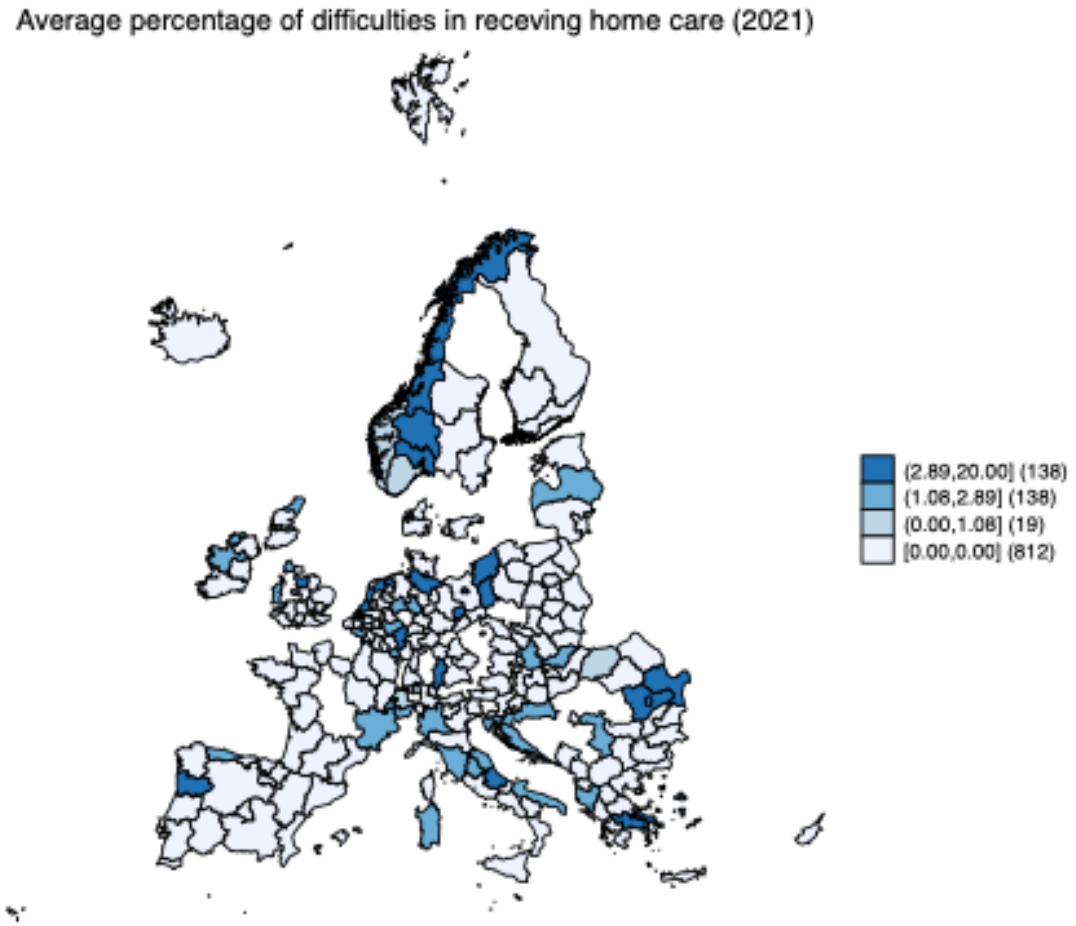
EMPIRICAL STRATEGY

$$y_{it} = \beta_1 log(Cumul(index\_Stringency_{it})) + (\boldsymbol{X}')_{it}\boldsymbol{\pi} + \theta_2 Log(Cumul(Covid\ deaths))_{it} + \theta_3 Log(Formal\ care\ supply)_{it-1} + \theta_4 Lack\ of\ Care\ in\ the\ Area_{it} + \lambda_i + \delta WaveDummies_t + \varepsilon_{it} \quad (1)$$

- Lack of care in the area: matched care-receivers and caregivers in the area that has the same interviewer
- Endogeneity of the job status: IV for "retired/working" with two dummy variables: eligibility for early retirement and the eligibility for statutory old age retirement, following the institutional information about retirement ages for each country-year.

Rationing of care: areas of matched respondents and interviewer





Personal care given	Men	Women	Men	Women
	POLS	POLS	FE	FE
Stringency Index	**0.000667****	**0.000813*****	**0.00132*****	**0.00116*****
	(0.000276)	(0.000277)	(0.000307)	(0.000314)
Log(formal care)	**-0.000788***	**-0.000950****	**-0.00213*****	**-0.00284*****
	(0.000426)	(0.000470)	(0.000774)	(0.000761)
lack of care in the area	**0.0117*****	**0.0207*****	**0.00612**	**0.0145****
	(0.00415)	(0.00442)	(0.00631)	(0.00603)
Age 66-75	**-0.0250*****	**-0.0508*****	0.00623	-0.00117
	(0.00471)	(0.00522)	(0.0104)	(0.00935)
Age 76-80	-0.0432***	-0.0766***	-0.0174	-0.0391***
	(0.00531)	(0.00568)	(0.0141)	(0.0131)
Low income	0.00794	0.0106**	0.00202	0.0616
	(0.00494)	(0.00526)	(0.0363)	(0.0486)
high income	-0.000456	0.00211	-0.0222	-0.0628
	(0.00542)	(0.00664)	(0.0402)	(0.0496)
Working	**0.00305**	**0.0115**	**0.00728**	**0.00370**
	(0.00623)	(0.00821)	(0.0126)	(0.0159)
unemployed or other	-0.00402	0.000972	0.0120	0.0103
	(0.00674)	(0.00581)	(0.0140)	(0.0119)
Constant	0.0435***	0.0939***	-0.000157	0.0753***
	(0.0124)	(0.0129)	(0.0189)	(0.0203)
Observations	20,676	28,829	20,676	28,829

Working status and gender if providing care

if providing personal care			
Working status			
	Male	Female	Total
No	602	1443	2045
	29.44	70.56	100.00
Yes	272	620	892
	30.49	**69.51**	100.00
Total	874	2063	2937
	29.76	**70.24**	100.00

CRITICAL POINTS AND NEXT STEPS

- Look at the characteristics of those receiving care (when possible) and whether "more care" was provided
- What happens to help/care within the household?
- What is substitute and what is complement?
- Model jointly labour supply and care giving (cost of giving care)
- From wave 9 get some idea of whether this is temporary and also better information on geo-location
- Issue of **compliance**

FIRST INSIGHT

- There is a “reserve of informal care” that gets activated during the pandemic but **not in the same way** between (and even within) countries.
- We present a way to measure the possible rationing effect of Covid-19 on formal care provision in the Share survey
- Stricter lockdown policies are associated to a higher likelihood of care provided.
- Women and younger-old people are more likely to provide help/care, so that the **typical caregiver is a woman – quite often aged 50 to 65.**
- This is true even if the woman is working

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WORK INTERRUPTIONS AND MEDIUM-TERM LABOUR MARKET OUTCOMES OF OLDER WORKERS DURING THE COVID-19 PANDEMIC

AGAR BRUGIAVINI, ELENA BUIA, IRENE SIMONETTI

EFFECTS OF WORK INTERRUPTIONS

Explore the relationship between having experienced work interruptions in the first wave of the pandemic and the **ex post** labour market status. Exploit specific occupational codes (4 digit ISCO codes)

Retirement between waves 1 and 2 of the SHARE Corona Survey;

Transition into unemployment (expecially long term)

Transition into homemaking

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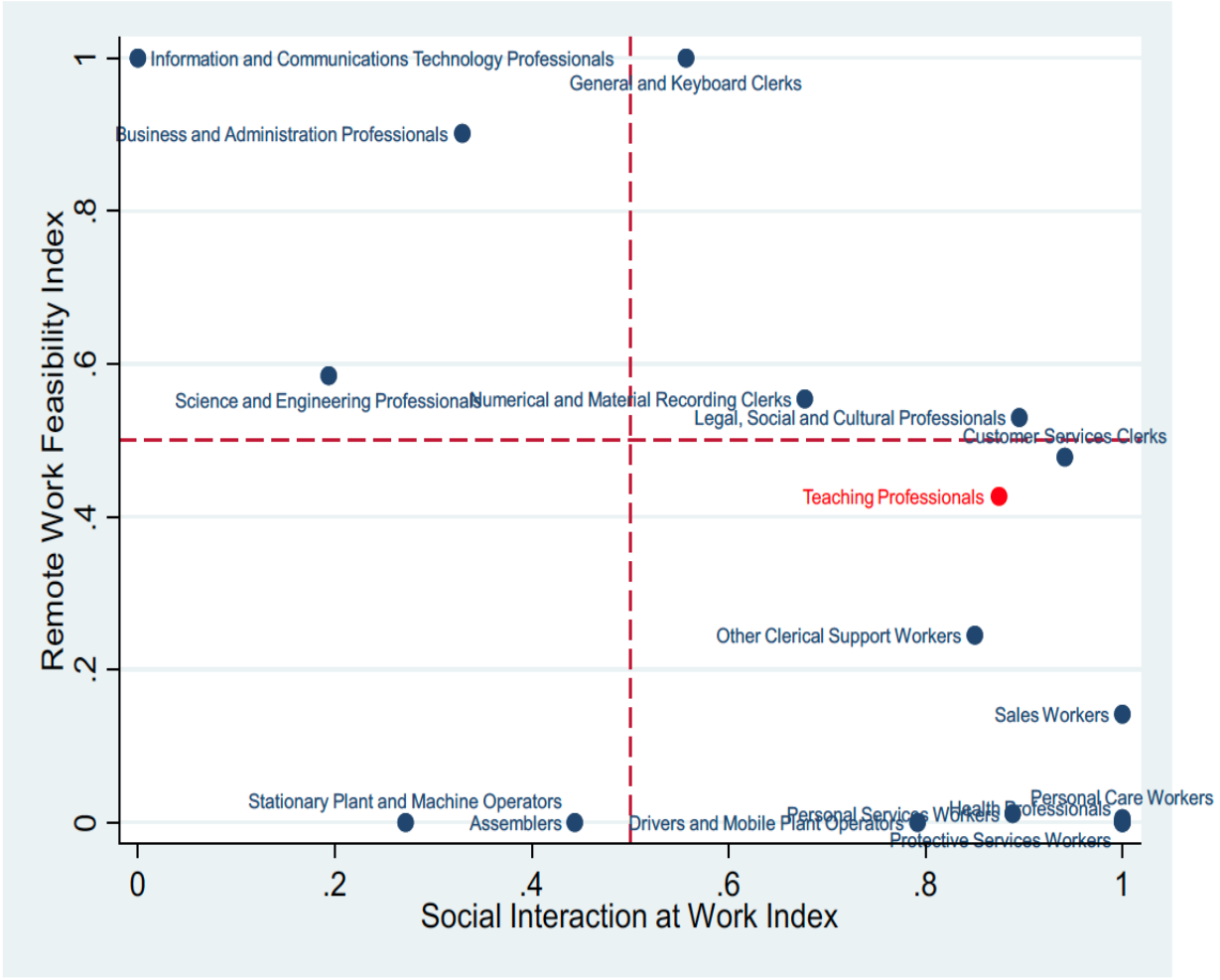
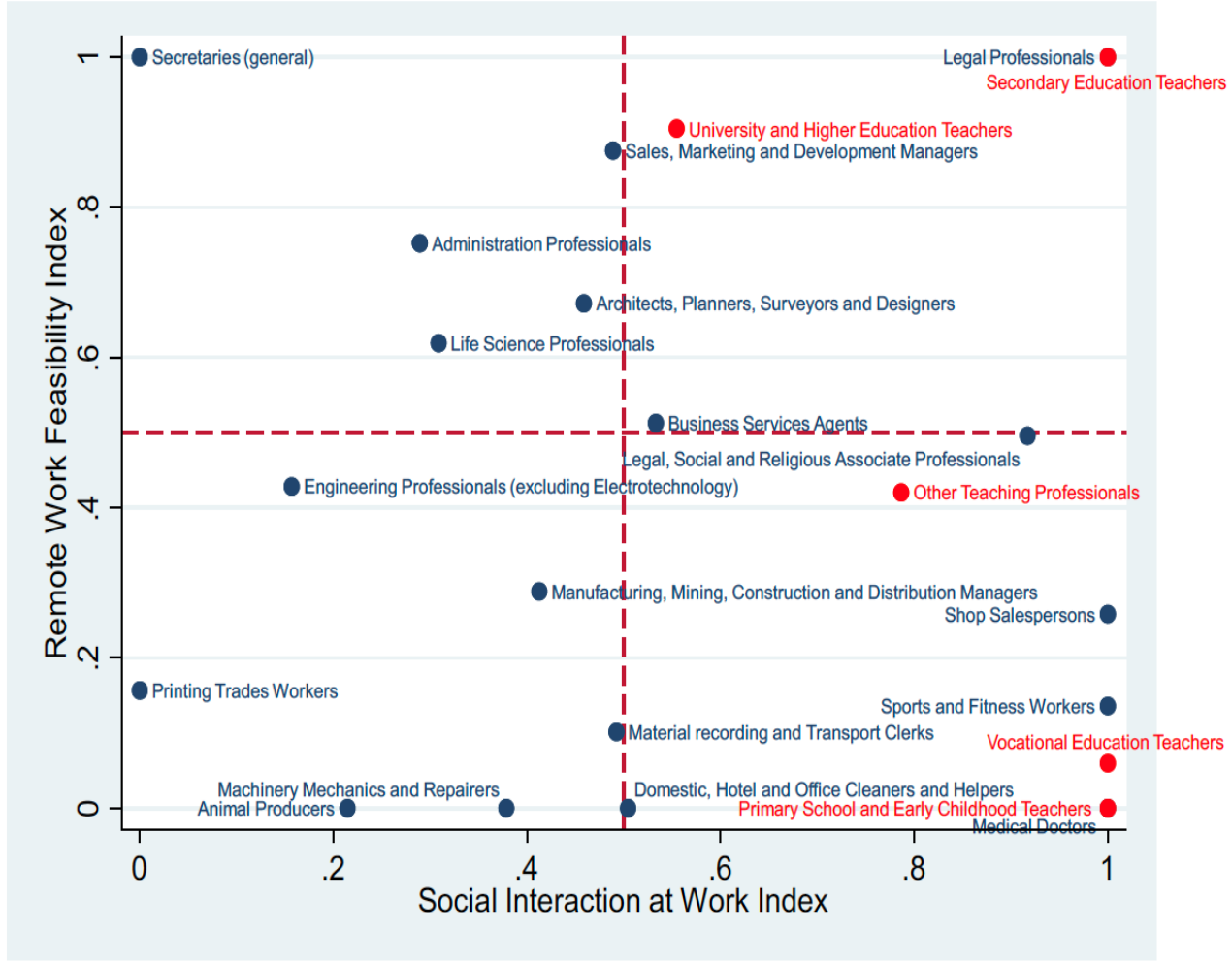
ALLOCATING JOBS TO «HIGH RISK» AND OR REMOTE WORK





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WORK INTERRUPTION PROBABILITY

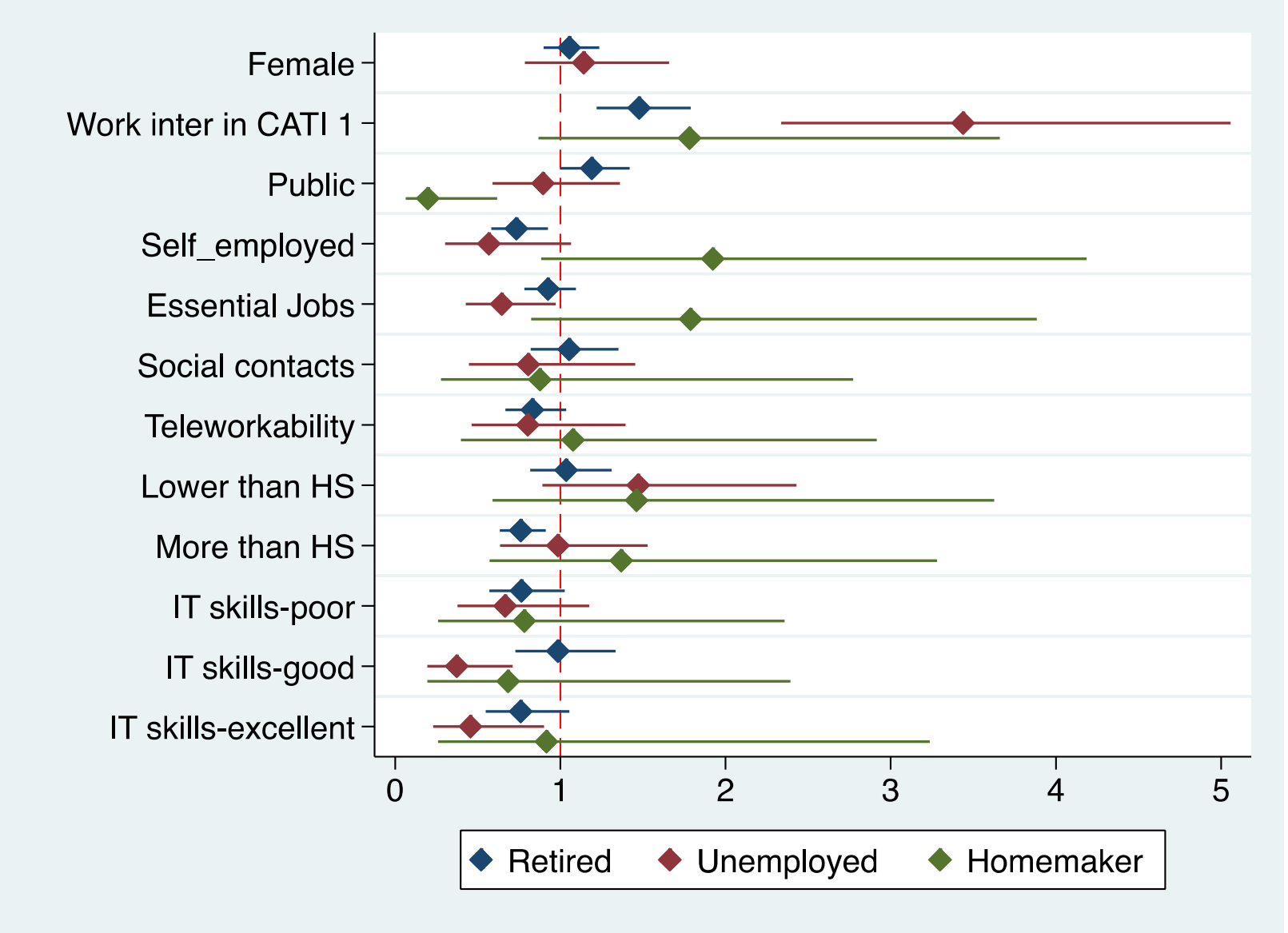
Probit Estimates

	Baseline Model	*Full Model*
Essential_Jobs	-0.061***	-0.035***
	(0.009)	(0.010)
Remote Work Feasibility Index	-0.119***	-0.078***
	(0.012)	(0.014)
Social Interaction Index	0.009	0.036**
	(0.014)	(0.015)
Essential_RemoteWorkIndex	YES	YES
Essential_SocialInteractionIndex	YES	YES
Additional covariates	NO	YES
Country dummies	YES	YES
N	7,619	6,878
Pseudo-r2	0.093	0.109
Log pseudolikelihood	-3246.2	-2910.4

Data: preliminary SHARE wave 8 release 0. Conclusions are preliminary. Note: average marginal effects of probit models are reported. Drop of observations in the full model due to missing values in additional explanatory variables. *p<0.1, **p<0.05, ***p<0.01

relative risk ratio with respect to being employed.

Note: Gender coefficient extremely large for becoming a homemaker.



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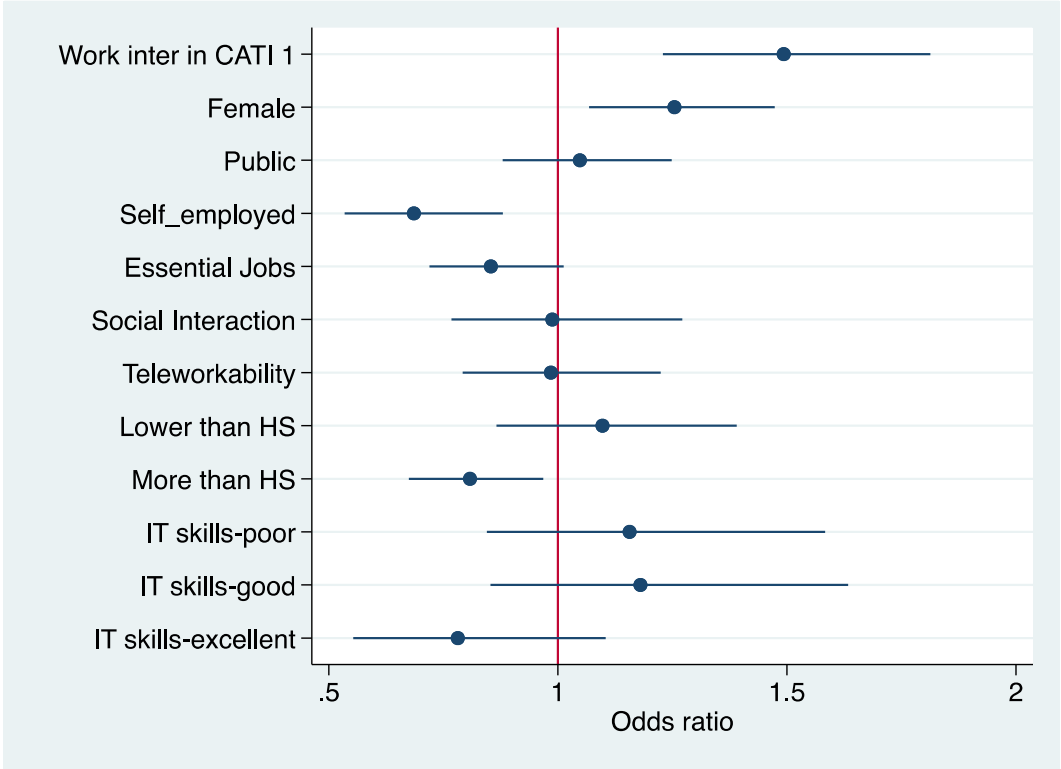
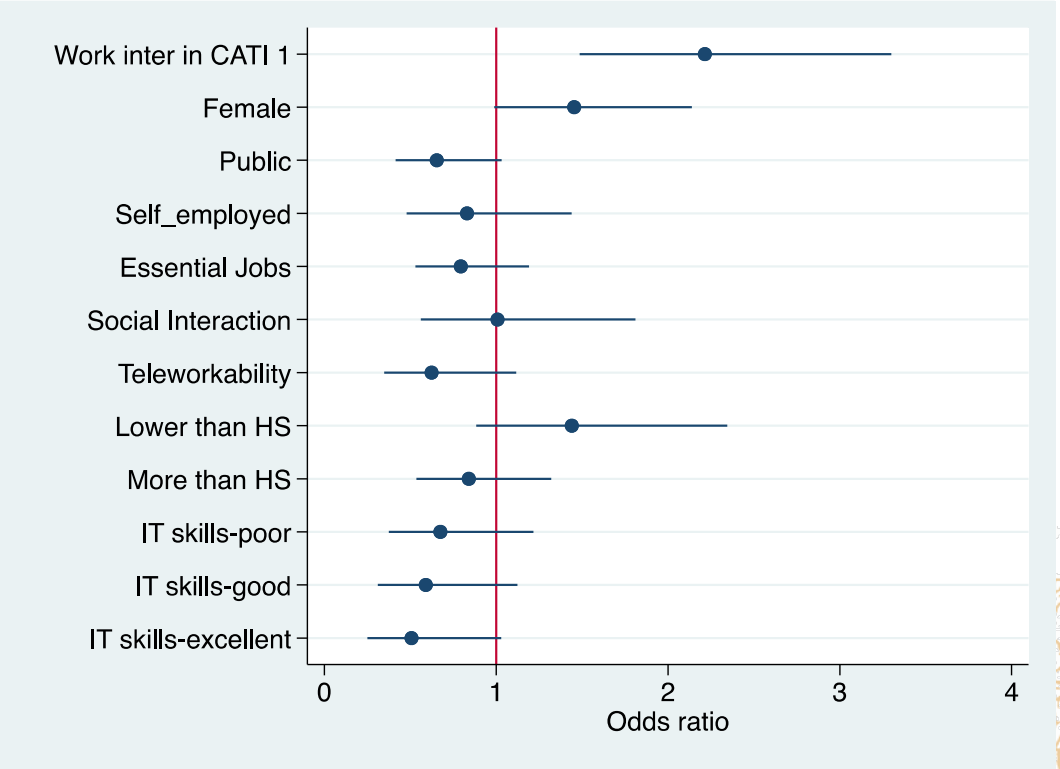
LOGIT ESTIMATES OF PROBABILITY OF "NON WORKING STATUS" IN SHARE WAVE 9

Broad definition of not working (including retirees)



Only unemployed or homemaker



EXPECTATIONS FOMATION THROUGH CONSENSUS

We assume individual's life expectancies are affected by some form of consensus.

At a first stage agents need to predict **θ**, and then agents look at other agent's expectations to confirm their choices

We consider an economy populated by a finite number n of agents, i = 1, . . . , n.

- Each agent **i** observes noisy private and public signals about θ.
  - Some private signals say, j = 1, . . . , K different regressors (such as age, health status):
    - $x_{j,i} = \theta + \varepsilon_{j,} \sim N(0, \sigma^2{}_j)$
  - a common signal ***y*** (it might be COVID) as a function of θ:

$$y = \theta + \eta \qquad \eta \sim N(0, \sigma^2{}_\eta)$$

EXPECTATIONS FOMATION THROUGH CONSENSUS

- the best prediction that minimize the Mean Squared Error, for each agent is the conditional expectation $a_i = E[\theta | y, x_{1,i}, x_{2,i} \ldots, x_{k,i}]$.
- Therefore, while information about y is common knowledge among agents, the private signal $x_{j,i}$ is specific to agent i and not observed by others.
- While forming predictions, agents do not just combine public and individual signals, but pay also attention to predictions made by other individuals. To introduce interactions, following Morris and Shin (2002) we suppose each agent build its individual forecast by minimizing a loss function

EXPECTED SURVIVAL DECREASED BY 1.5 PPT ON AVERAGE AFTER THE PANDEMIC

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Table1: Fixed effect regression - Full sample

Log of age	64.22***	70.67***	64.46***	35.83	36.42	37.27
	(22.04)	(22.13)	(22.05)	(24.35)	(24.26)	(24.25)
Target age is 75	ref	ref	ref	ref	ref	ref
Target age is 80	-6.050***	-5.959***	-6.024***	-6.003***	-6.059***	-6.083***
	(0.617)	(0.619)	(0.617)	(0.619)	(0.617)	(0.617)
Target age is 85	-10.62***	-10.43***	-10.57***	-10.24***	-10.41***	-10.47***
	(0.956)	(0.960)	(0.956)	(0.961)	(0.958)	(0.958)
Target age is 90	-17.95***	-17.85***	-17.92***	-17.07***	-17.29***	-17.35***
	(1.430)	(1.436)	(1.430)	(1.454)	(1.448)	(1.448)
Target age is 95	-24.67***	-24.79***	-24.70***	-23.09***	-23.34***	-23.36***
	(1.863)	(1.871)	(1.864)	(1.935)	(1.928)	(1.927)
Target age is 100	-32.49***	-33.00***	-32.59***	-30.16***	-30.30***	-30.29***
	(2.502)	(2.512)	(2.502)	(2.645)	(2.635)	(2.635)
Consensus	0.336***	0.334***	0.336***	0.338***	0.339***	0.339***
	(0.0408)	(0.0410)	(0.0408)	(0.0410)	(0.0408)	(0.0408)
Wave 9	-1.422**	-1.933***	-1.453**	24.55***	19.90**	19.10**
	(0.718)	(0.720)	(0.718)	(7.763)	(7.740)	(7.741)
Wave 9 x Log of age				-6.016***	-4.850***	-4.662***
				(1.756)	(1.751)	(1.751)
Health score		3.105***	3.069***		3.080***	3.045***
		(0.206)	(0.207)		(0.207)	(0.207)
Has a good numeracy			2.316***			2.275***
			(0.570)			(0.571)
Constant	-248.1***	-223.3**	-222.2**	-101.8	-104.4	-110.1
	(93.18)	(92.81)	(92.83)	(102.5)	(102.1)	(102.1)
N	57510	57510	57510	57510	57510	57510

Standard errors in parentheses, * p<0.1, ** p<0.05, *** p<0.01

Source: Bergeot, Brugiavini, Raggi «The Effect of the Covid-19 Pandemic on Longevity Expectations»

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HELP OR CARE PROVIDED TO WHOM ?

HELP TO	Obs	Mean	Std.Dev.
Adult children	10964	0.203	0.402
Parents	10964	0.156	0.363
Relatives	10964	0.218	0.413
Others (neighbors, friends…)	10964	0.296	0.456
PERSONAL CARE TO			
Adult children	2937	0.138	0.345
Parents	2937	0.179	0.384
Relatives	2937	0.160	0.366
Others (neighbors, friends…)	2937	0.168	0.374

DISTRIBUTION OF THE STRINGENCY INDEX (CORONA Survey Wave 1)