The short- and long-run impacts of infection on labor outcomes during COVID-19

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Motivation

- To understand the overall cost of a pandemic to the economy, it is crucial to understand its impact on labor outcomes, such as reduced work hours or income loss.

- There is scarcity in research which analyzes the short- and long-run impacts of infection on labor outcomes.

This study

- In 2023, we conducted a large-scale survey on working-age individuals in Japan who had been infected.
  - What makes this survey unique is that it includes detailed questions on health and labor outcomes such as type and duration of symptoms, employment status, working hours, and income to analyze a overall picture of labor outcomes of those who were infected.
  - The survey asks the question separately for during the period of hospitalization or convalescing at home/hotel (*during COVID*) and during a month after that period (*after COVID*) and for each symptom.

- Using the survey, we examined the following questions:
  - Q1: Who was affected more than anyone else?
  - Q2: Can differential impacts on labor outcomes by individual type be explained by their differences in the likelihood/duration of having symptoms?
  - Q3: Do infection prevention policies (vaccination) alleviate negative effects on labor outcomes?

Main findings

- Q1: Individuals whose labor outcomes are affected most are:
  - By access to remote work: Workers without access to remote work
  - By employment type: Contract, part-time, and self-employed and other workers
  - By industry: Workers in food/beverage and accommodation, and transportation

- Effects on contract, part-time, and self-employed workers and those on workers without access to remote work tend to persist. The duration of the decline is longer for self-employed workers.

- The impact on the probability of a decline in working hours/income by age is mixed, but the impact on the duration of the decline is longer for older workers.

Main findings (cont.)

- Q2: Although there tend to be significant associations between symptoms and labor outcomes, especially in the short-run, the differences in the likelihood/duration of having symptoms by gender, age, access to remote work, employment type, or industry do not explain the differential impacts on labor outcomes well.

- Q3: Vaccination tends to decrease the probability of reduction in working hours after COVID by shortening the duration of symptoms.

Most related literature

- Long COVID and economic outcomes
  - Labor supply (Bach 2022, Cutler 2022, Domash and Summers 2022, Goda and Soltas 2022, Price 2022, Sheiner and Salwati 2022)
  - Financial disruption (Rhead et al. 2023)

Compared to previous studies, we examined the short- and long-run impacts of infection on labor outcomes (working hours and income) by individual type, associations between the negative impacts on labor outcomes and COVID-19-related symptoms, and the role of infection prevention policies in alleviating the negative impacts using a large-scale survey.

Overview of the survey

- Timing: February 7-16th, 2023
- Sample: Residence in Tokyo metropolitan area who were working as of March, 2020 and have been infected with COVID-19 at least once.
- Effective number of respondents: 9,765 (Out of 9,816 samples, those whose height between 100-250 cm and weight between 30-200 kg are counted as effective.)
  - Male: 49.9%, Female: 50.1%
  - Average age: 43.3 years old (between 20-64 years old)

Descriptive statistics

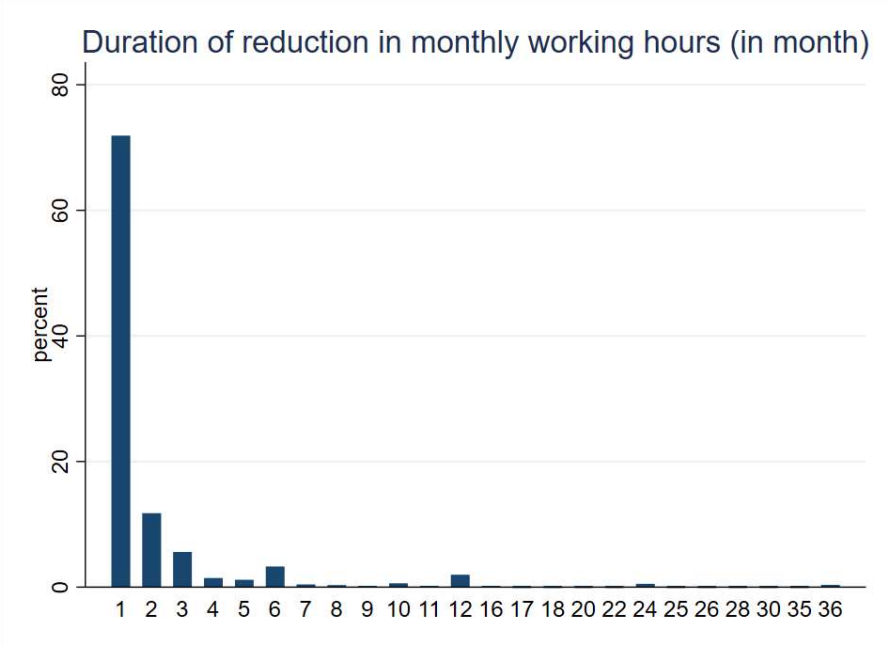
- During COVID (i.e., during the period of hospitalization or convalescing at home/hotel)
  - Fraction of those who experienced a decline in daily working hours: **45.4**%
  - Fraction of those who experienced a decline in daily income: **25.4**%

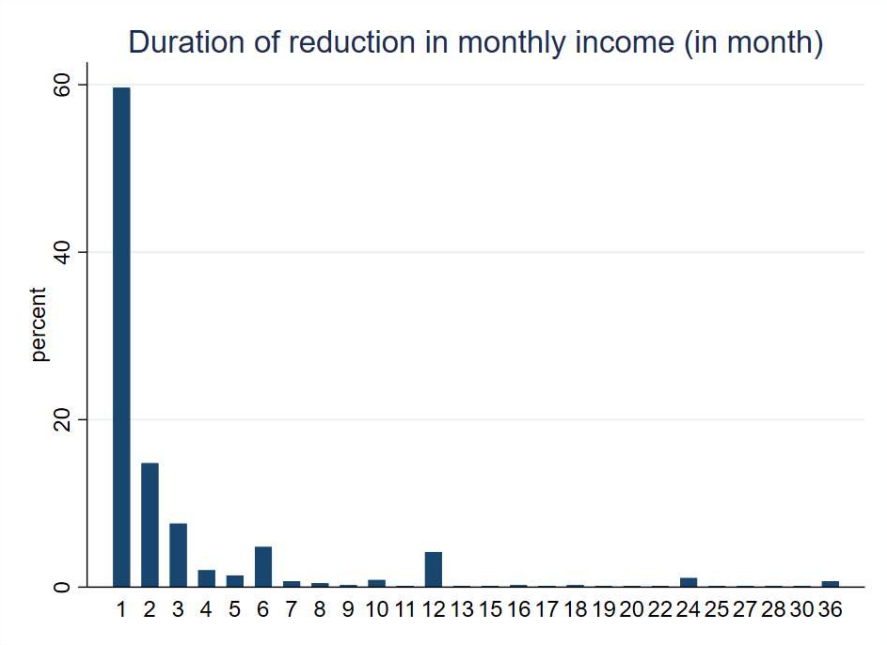
- After COVID (i.e., during a month after that period)
  - Fraction of those who experienced a decline in monthly working hours: **17.9**%
  - Fraction of those who experienced a decline in monthly income: **13.2**%

- Duration of a decline in working hours/income after COVID
  - In terms of monthly working hours: **2.2** months (mean), 1 month (median)
  - In terms of monthly income: **3.1** months (mean), 1 month (median)

- Out of those infected, **94.9**% experienced at least one COVID-related symptom
  - The mean duration of symptoms: **0.6** months (**17.4** days)

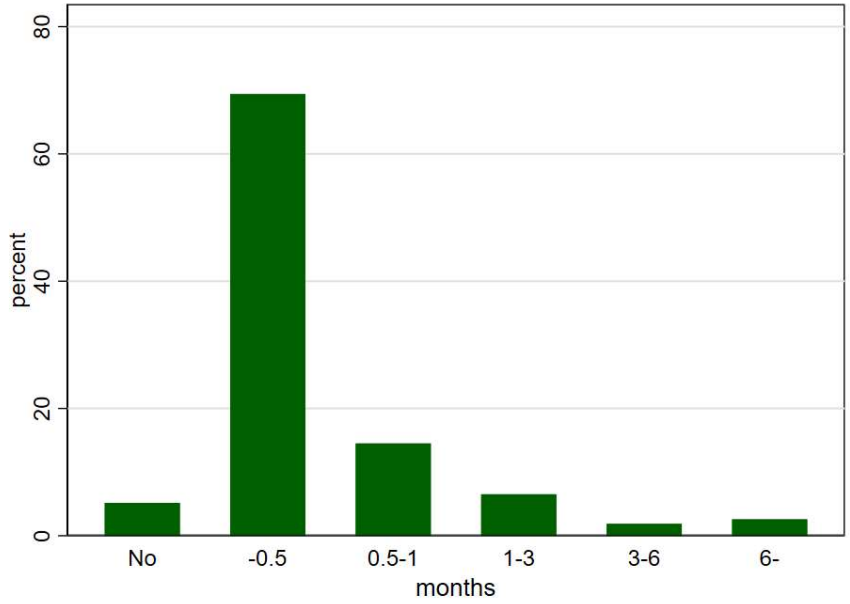
Duration of reduction in working hours/income





- For those who experienced a reduction in working hours (N = 2,478) or income (N = 1,291) after COVID, most people experienced a reduction for 1 month or less, but some people experienced a reduction of 6 months or even longer.

Distribution - Duration of symptoms

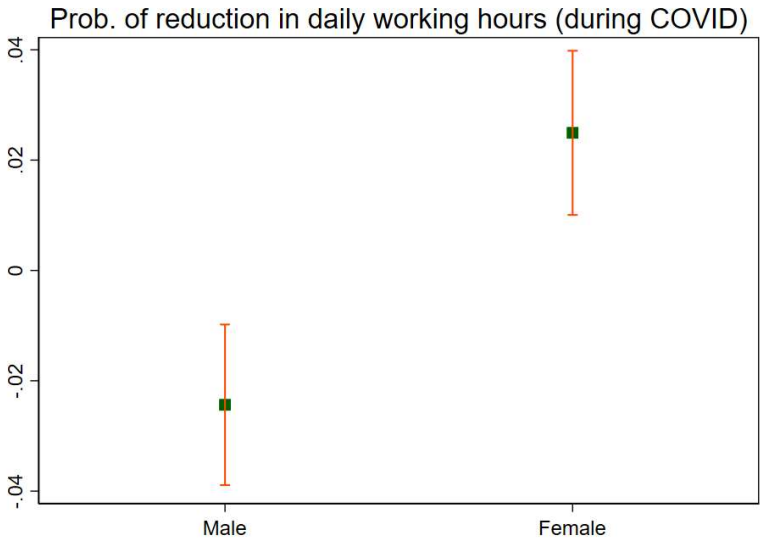


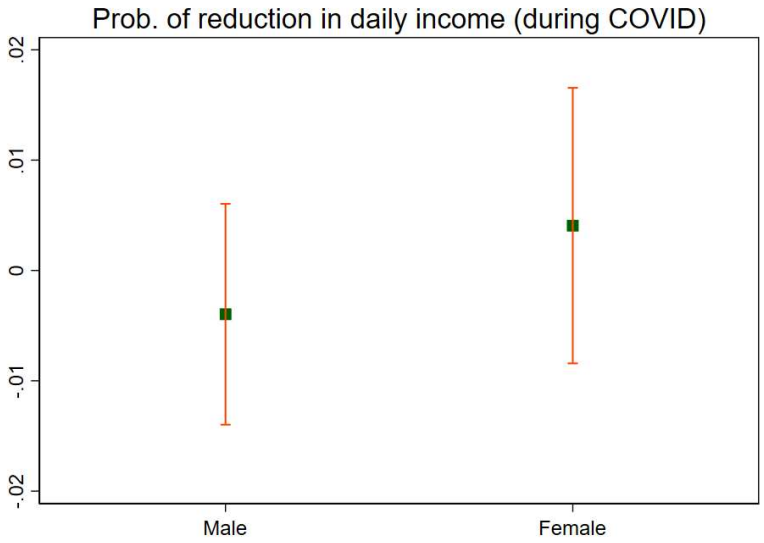
- Most people experienced a symptom for 2 weeks or less (69.4%), but some people (3%) experienced a symptom for 6 months or longer.

Q1. Who was affected more than anyone else?

Short-run impacts

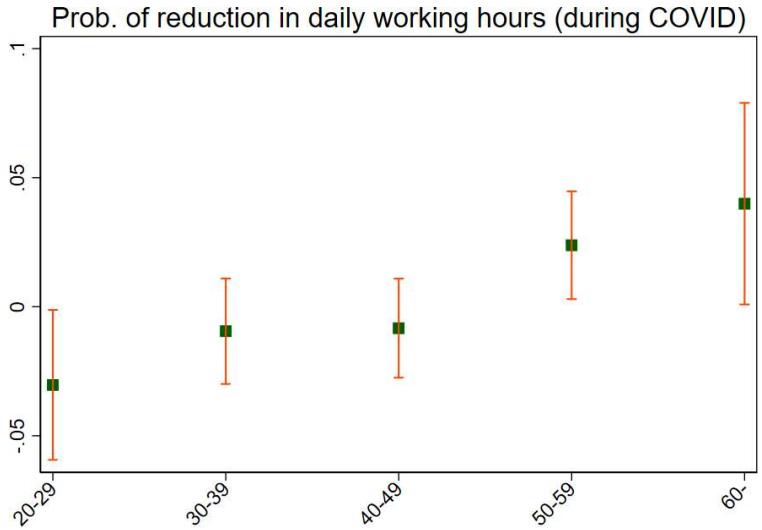
Probability of reduction in working hours and income By gender, during COVID

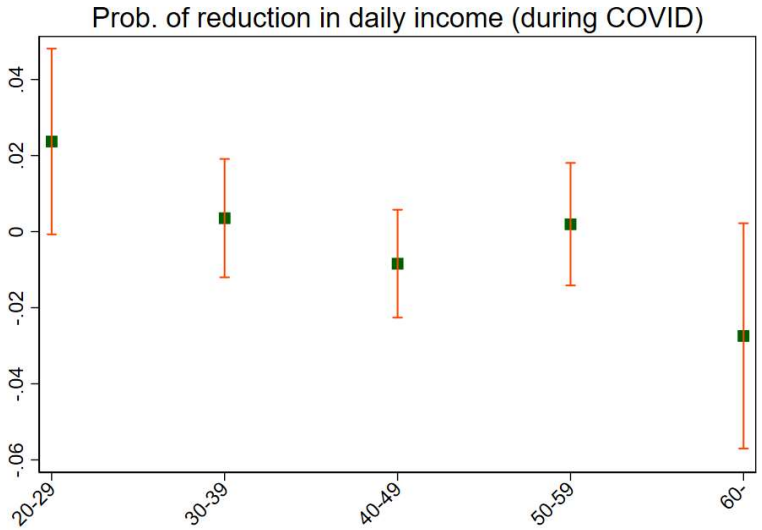




- Female workers were more likely than male workers to experience a decline in *daily working hours* by **0.07** pp (Table A1).
  - However, there is no statistical difference between male and female workers in terms of *daily income.*

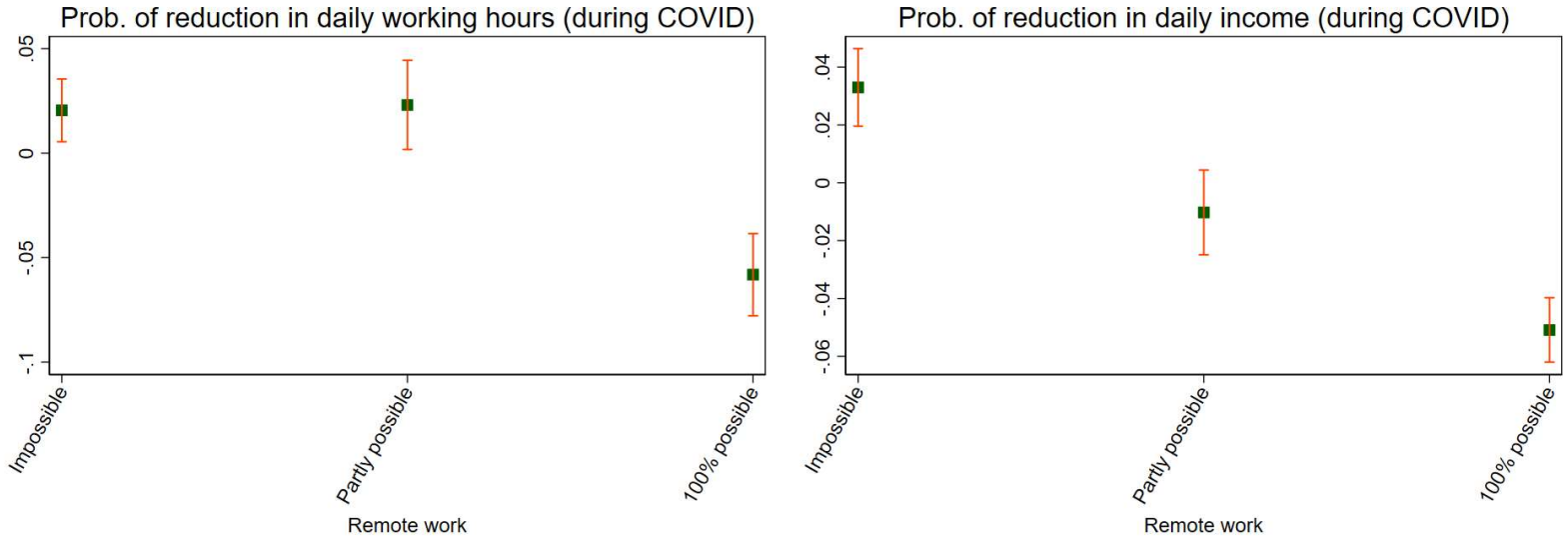
By age, during COVID





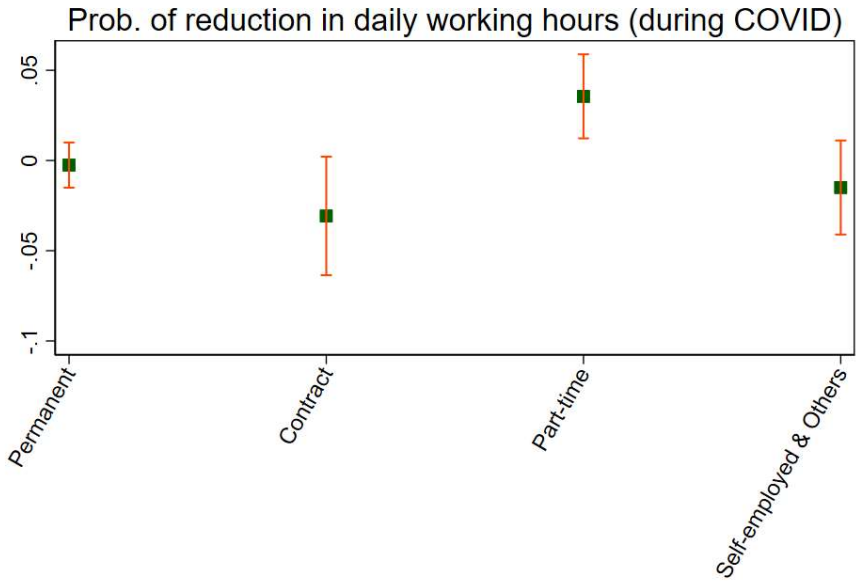
- Older workers are more likely than younger ones (20s) to experience a reduction in daily working hours by **0.07** pp (50s), **0.09** pp (60s), respectively (Table A2).
- Older workers are *less* likely than younger ones (20s) to experience a reduction in daily income by 0.04 pp (40s), 0.03 pp (50s), 0.06 pp (60s), respectively (Table A2).

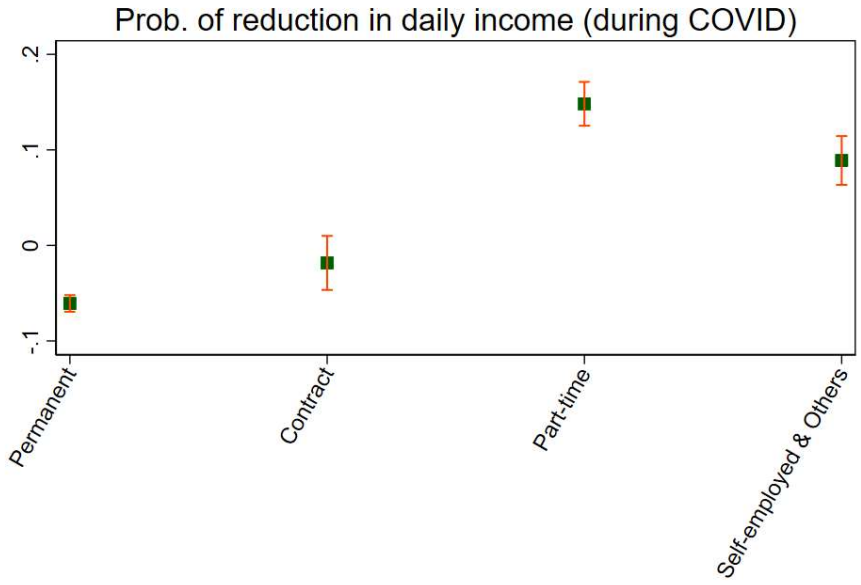
By access to remote work, during COVID



- Workers with access to remote work (100%) are less likely to experience a reduction in daily working hours than those without access to remote work by **0.12** (Table A3).
- Workers with access to remote work (100%, partly) are less likely to experience a reduction in daily income than those without access to remote work by **0.13** pp and **0.08** pp, respectively (Table A3).

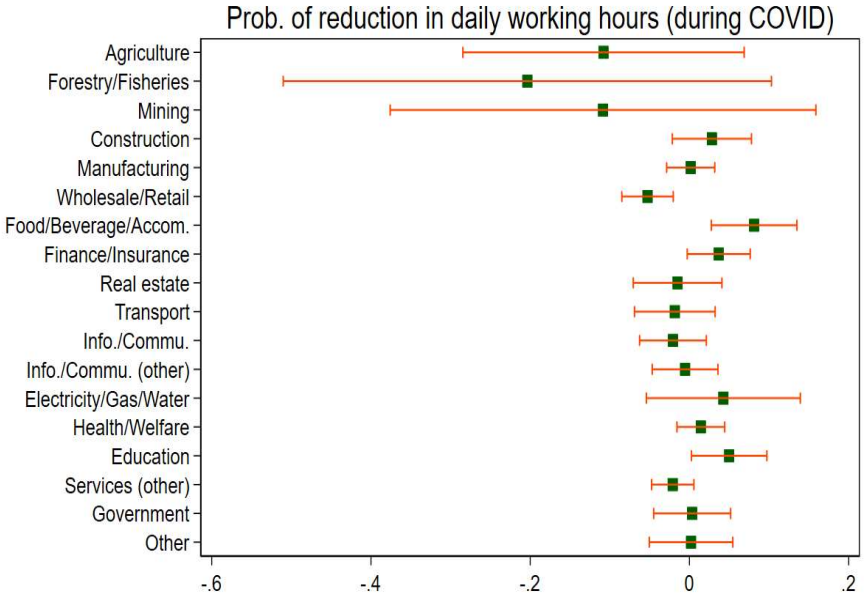
By employment type, during COVID

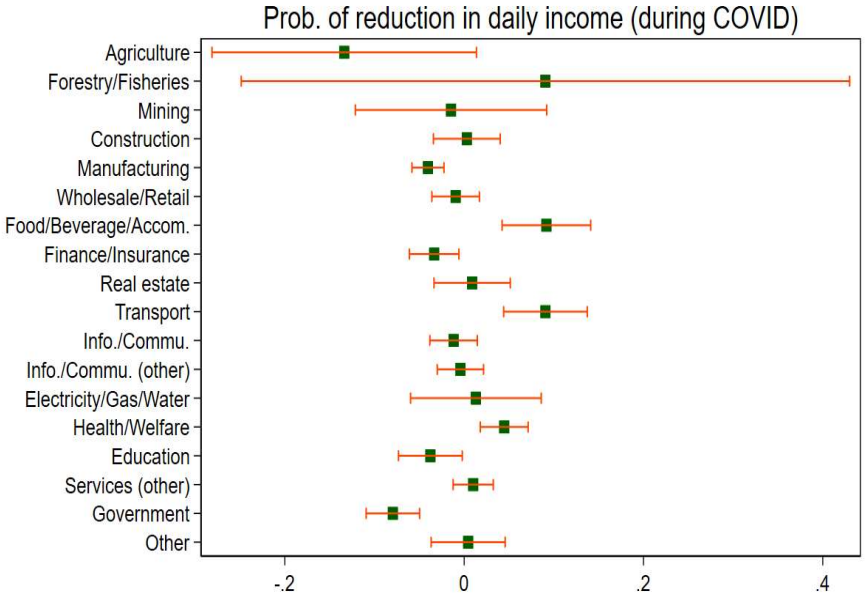




- Part-time workers are more likely than permanent workers to experience a reduction in daily working hours by **0.05** pp (Table A4).
- Contract workers (**0.08** pp), part-time workers (**0.31** pp), and self-employed and other workers (**0.21** pp) are more likely than permanent workers to experience a reduction in daily income (effect size in parentheses) (Table A4).

By industry, during COVID





- Workers in most industries are more affected than those in primary sectors (agriculture, forestry, fisheries, and mining) in terms of daily working hours. The effects are more pronounced for industries such as accommodation, food and beverage (**0.23** pp) and education (**0.20** pp) (Table A5).
- Workers in accommodation, food and beverage (**0.15** pp) and transportation (**0.14** pp) are more likely to experience a reduction in daily income, as compared to those in primary sectors (Table A5).

Summary of results (short-run impact)

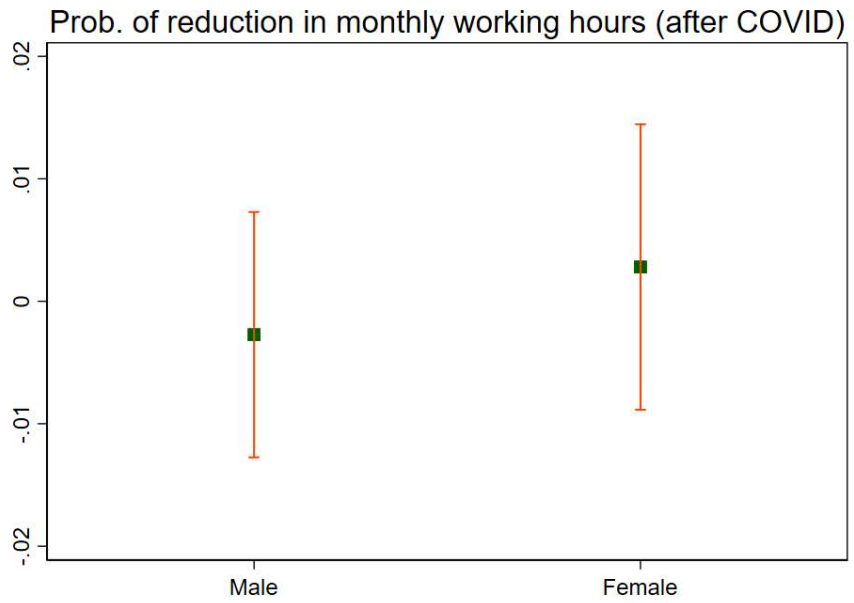
- Individuals whose labor outcomes are affected most are:
  1. Workers without access to remote work
  2. Contract, workers, part-time workers, and self-employed and other workers
  3. Workers in food/beverage and accommodation, and transportation

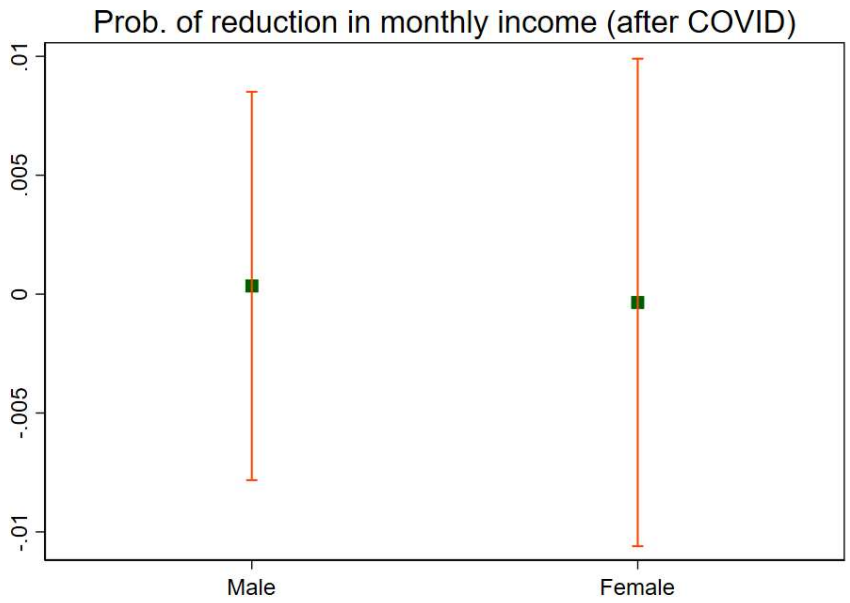
- The impact on the probability of a decline in working hours/income by age is mixed.
  - Older workers are more likely to experience a reduction in daily working hours, but younger workers are more likely to experience a reduction in daily income.

Long-run impacts

1. Probability of reduction in working hours/income

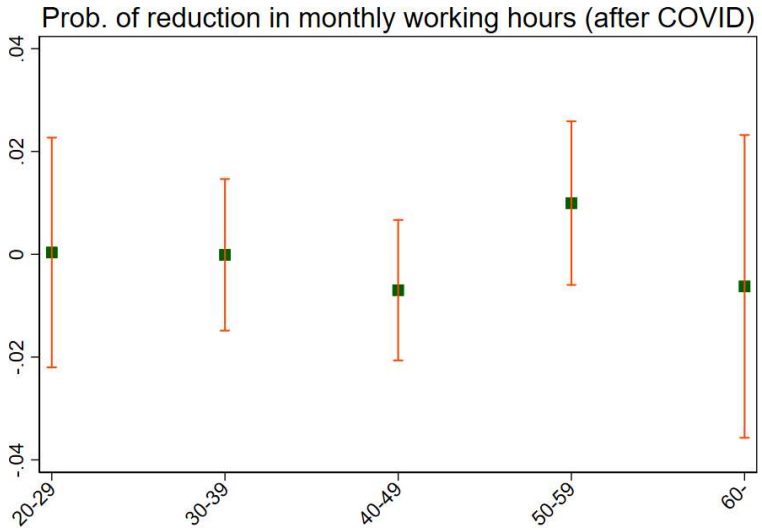
By gender, after COVID

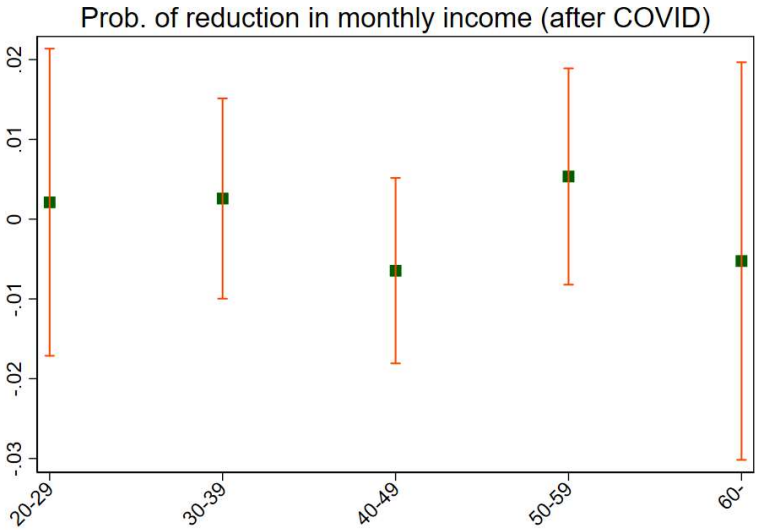




- There is no significant difference between male and female workers (Table A6).

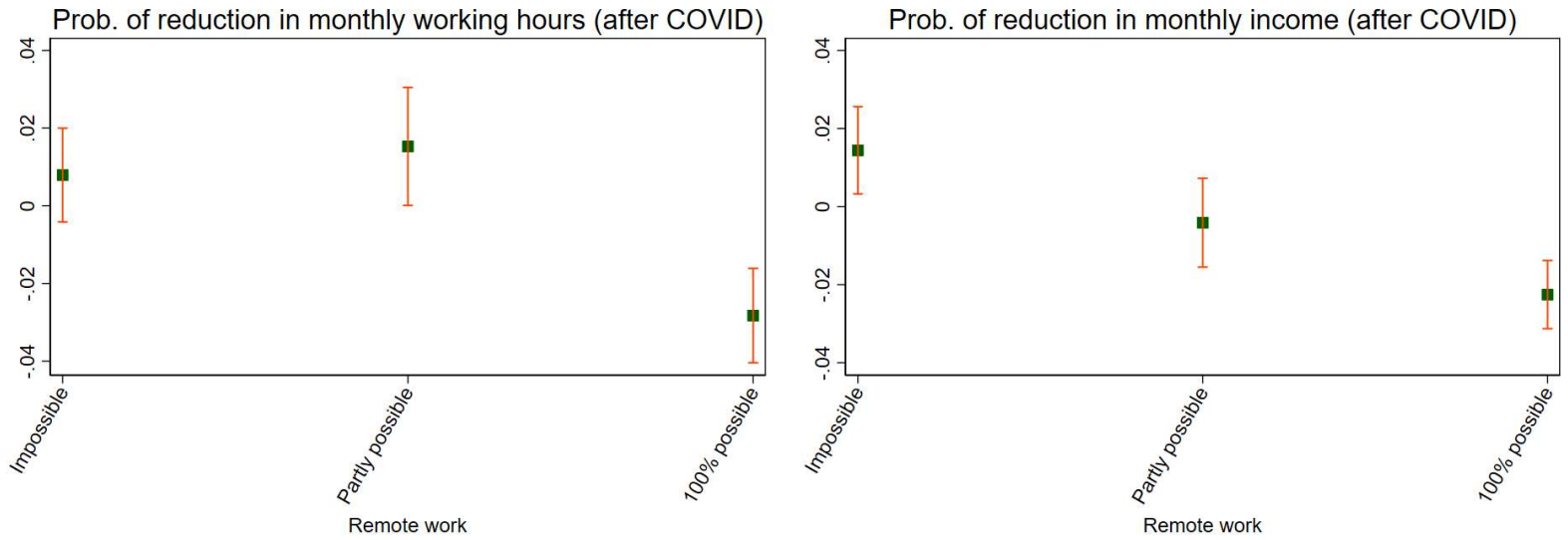
By age, after COVID





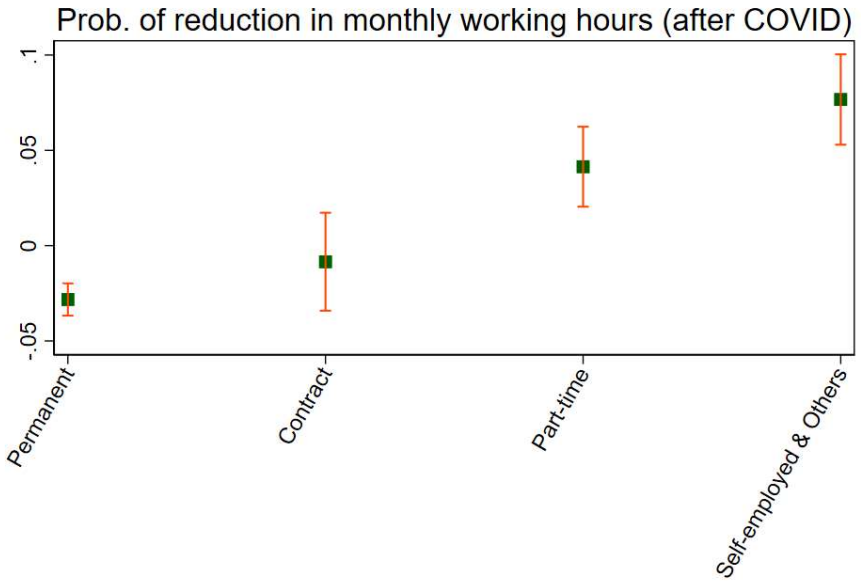
- There is no significant difference across ages (Table A7).

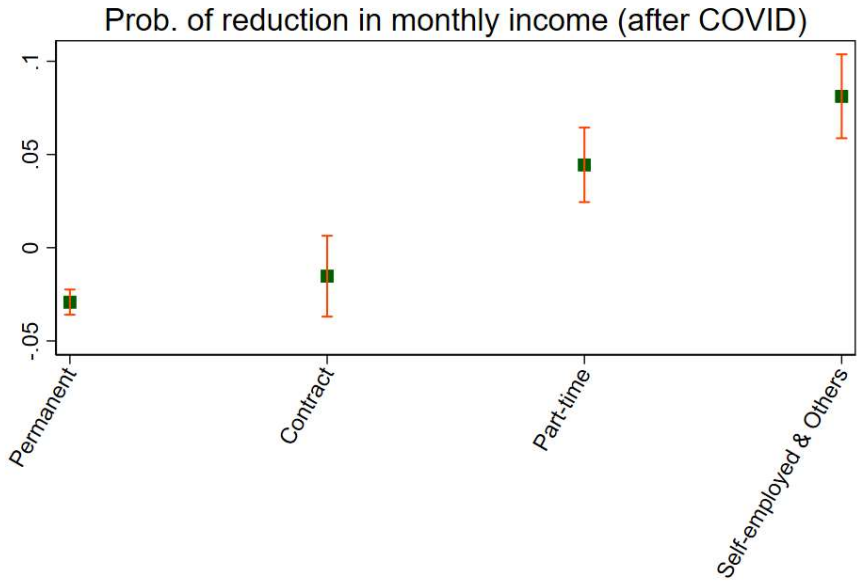
By access to remote work, after COVID



- Workers with access to remote work (100%) are less likely to experience a reduction in monthly working hours than those without access to remote work by **0.06** (Table A8).
- Workers with access to remote work (100%, partly) are less likely to experience a reduction in daily income than those without access to remote work by **0.06** pp and **0.04** pp, respectively (Table A8).

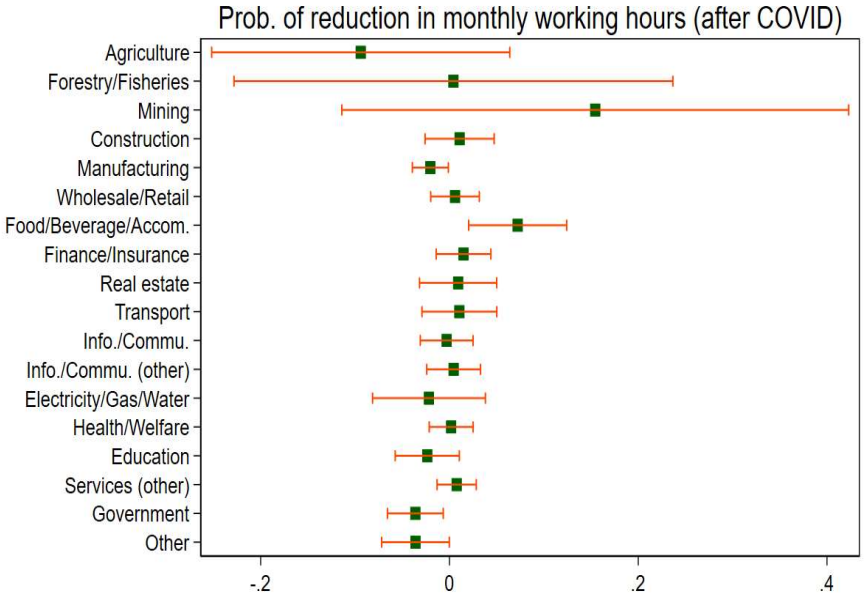
By employment type, after COVID

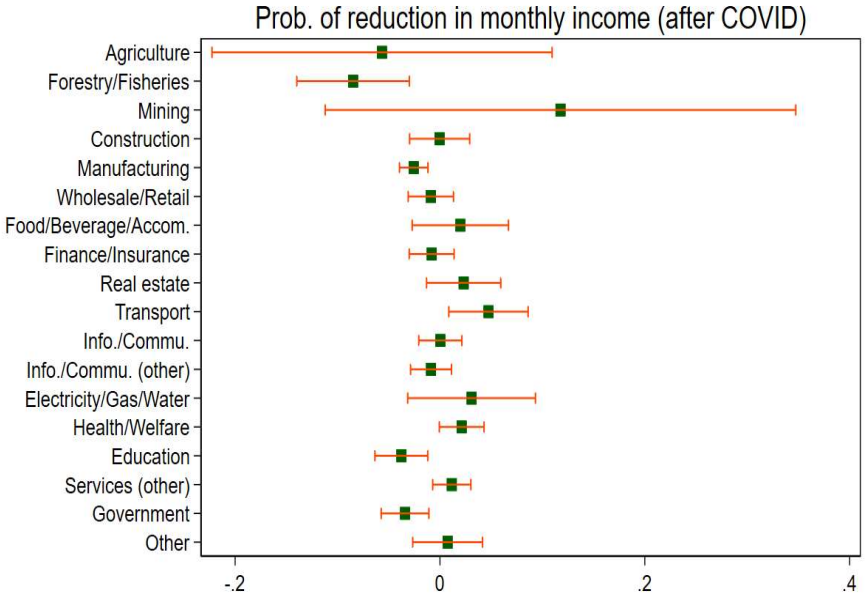




- Contract workers (**0.03** pp), part-time workers (**0.11** pp), and self-employed and other workers (**0.14** pp) are more likely than permanent workers to experience the reduction in monthly working hours (Table A9).
- Contract workers (**0.03** pp), part-time workers (**0.11** pp), and self-employed and other workers (**0.14** pp) are more likely than permanent workers to experience the reduction in monthly income (Table A9).

By industry, after COVID



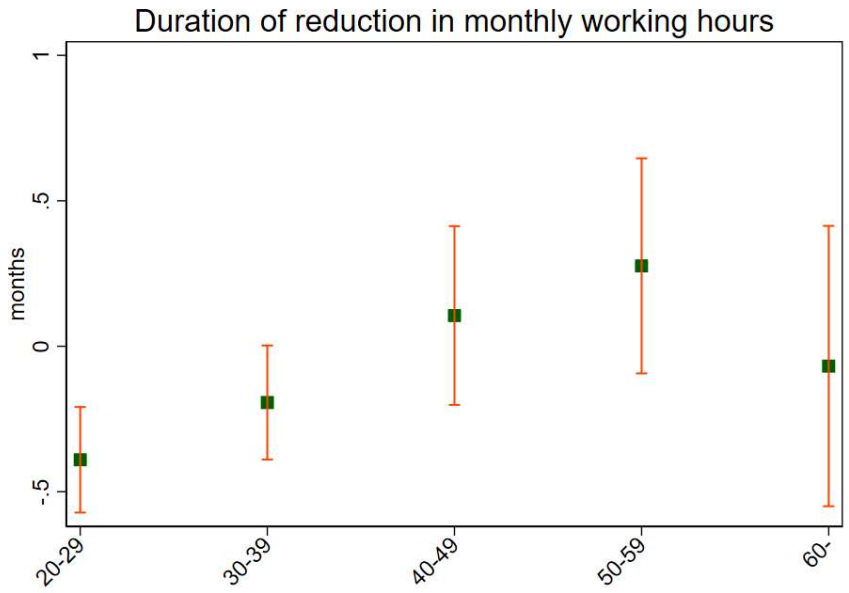


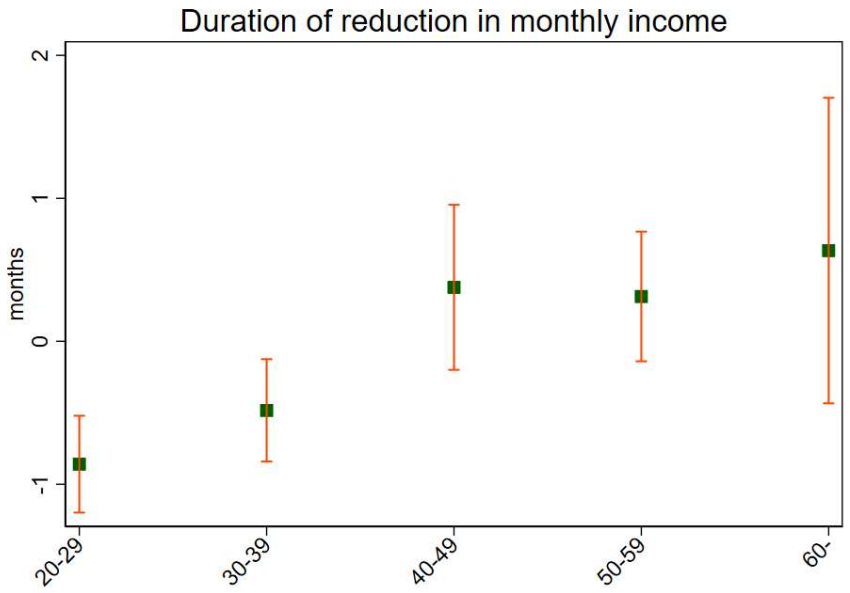
- There is no significant difference across industries (Table A10).

Long-run impacts

2. Duration of reduction in working hours/income

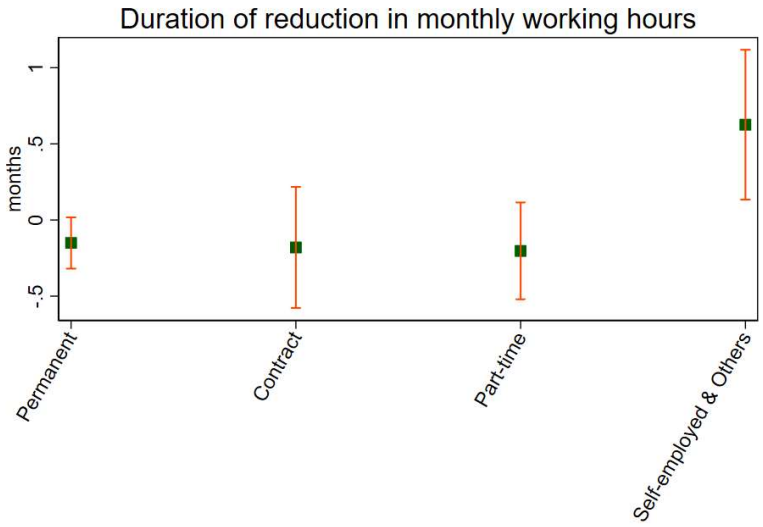
Duration of reduction in working hours or income after COVID
By age

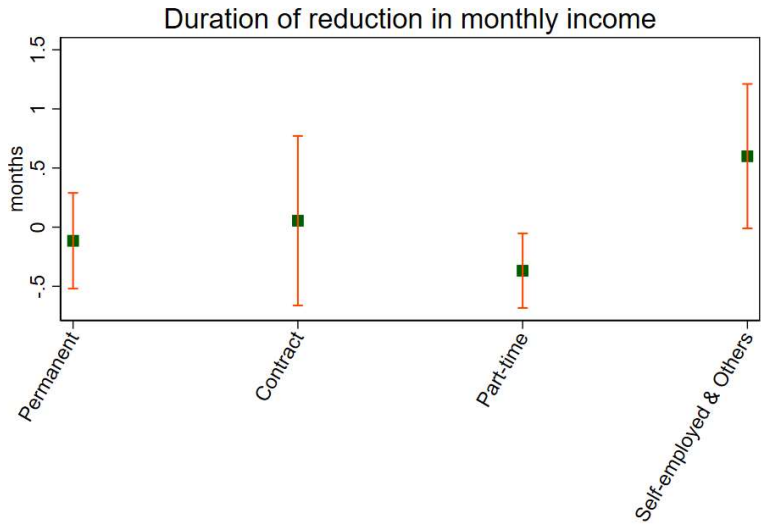




- Reduction in working hours/income is longer for older workers (Table A12).
  - Working hours: 0.59 months (40s) and 0.81 months (50s) longer, as compared to 20s
  - Income: 1.51 months (40s), 1.51 months (50s), and 1.92 months (60s) longer, as compared to 20s

Duration of reduction in working hours or income after COVID
By employment type





- The duration of reduction in monthly working hours (**0.93** months) and income (**0.85** months) is longer for self-employed and other workers, as compared to permanent workers (Table A14).
- There is no systematic difference with respect to gender (Table A11), access to remote work (Table A13), or industry (Table A15).

Summary of results (long-run impact)

- Effects on contract, part-time, and self-employed workers and those on workers without access to remote work tend to persist.

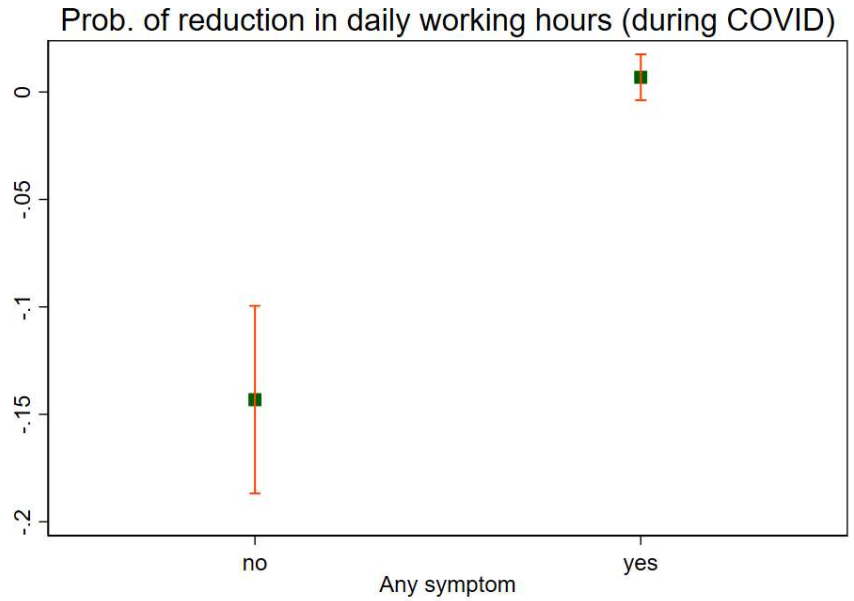
- Duration of the decline tends to be longer for self-employed and older workers.

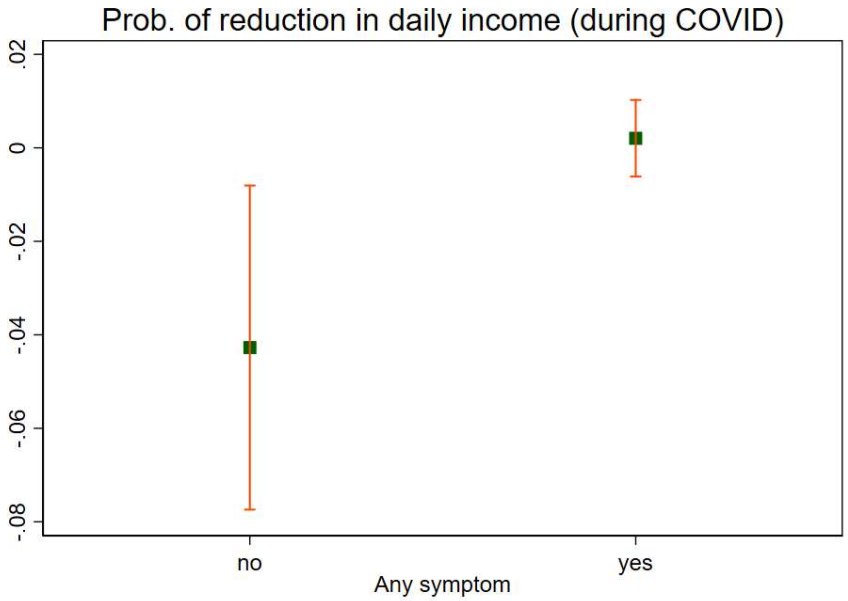
Symptoms (short- and long-run)

Q2. Can differential impacts on labor outcomes by individual type be explained by their differences in the likelihood/duration of having symptoms?

1. Overall associations

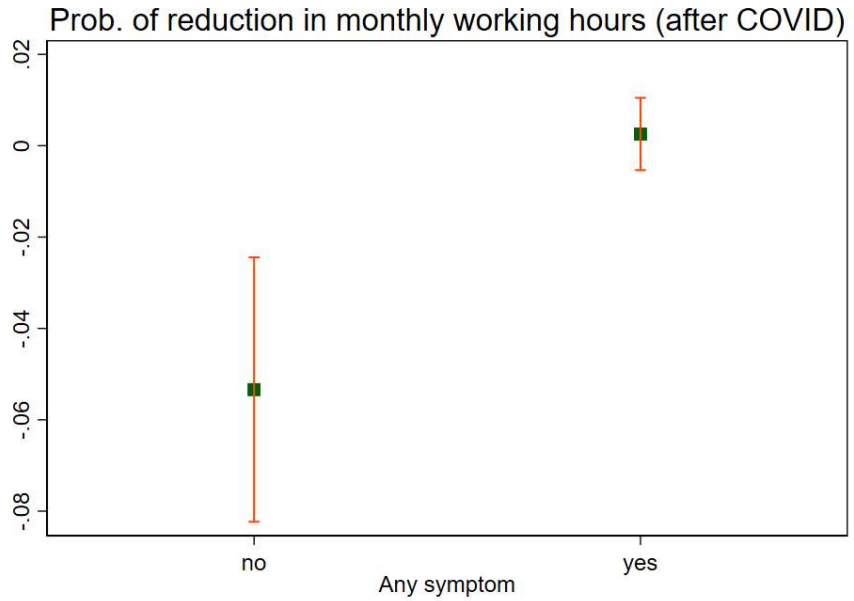
Reduction in working hours and income is more likely to occur for those who have symptoms, during COVID

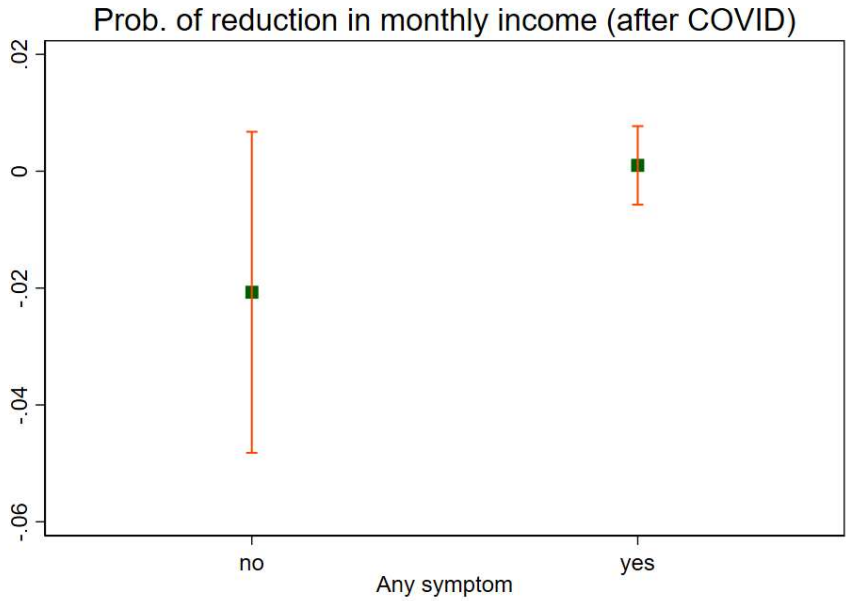




- Compared to workers who did not have any COVID-related symptoms, those who had symptoms are more likely to experience a reduction in daily working hours (**0.16** pp) and daily income (**0.05** pp) (Table A16).

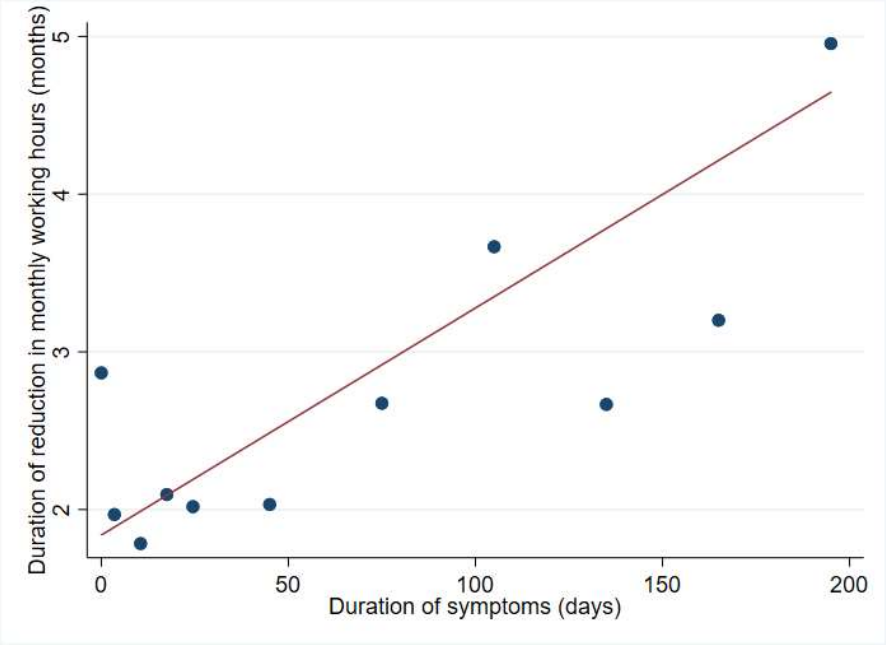
Reduction in working hours is more likely to occur for those who have symptoms, after COVID

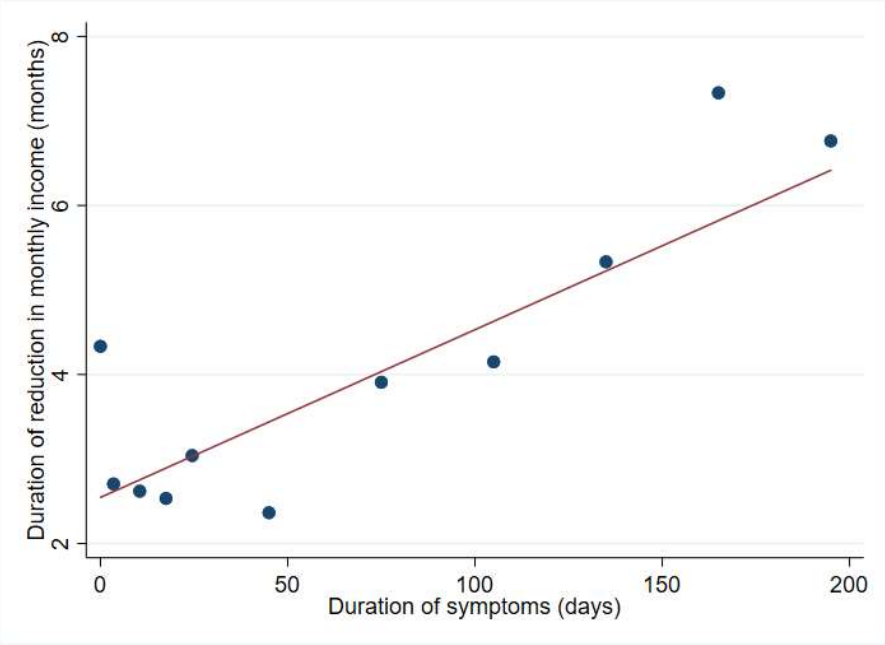




- Compared to workers who did not have any symptoms, those who had symptoms are more likely to experience a reduction in monthly working hours (**0.06** pp). However, there is no significant difference with respect to monthly income (Table A17).

Associations between the duration of symptoms and that of a reduction in working hours or income





- There are significant associations between the duration of COVID-related symptoms and that of a reduction in monthly working hours and monthly income (Table A18).

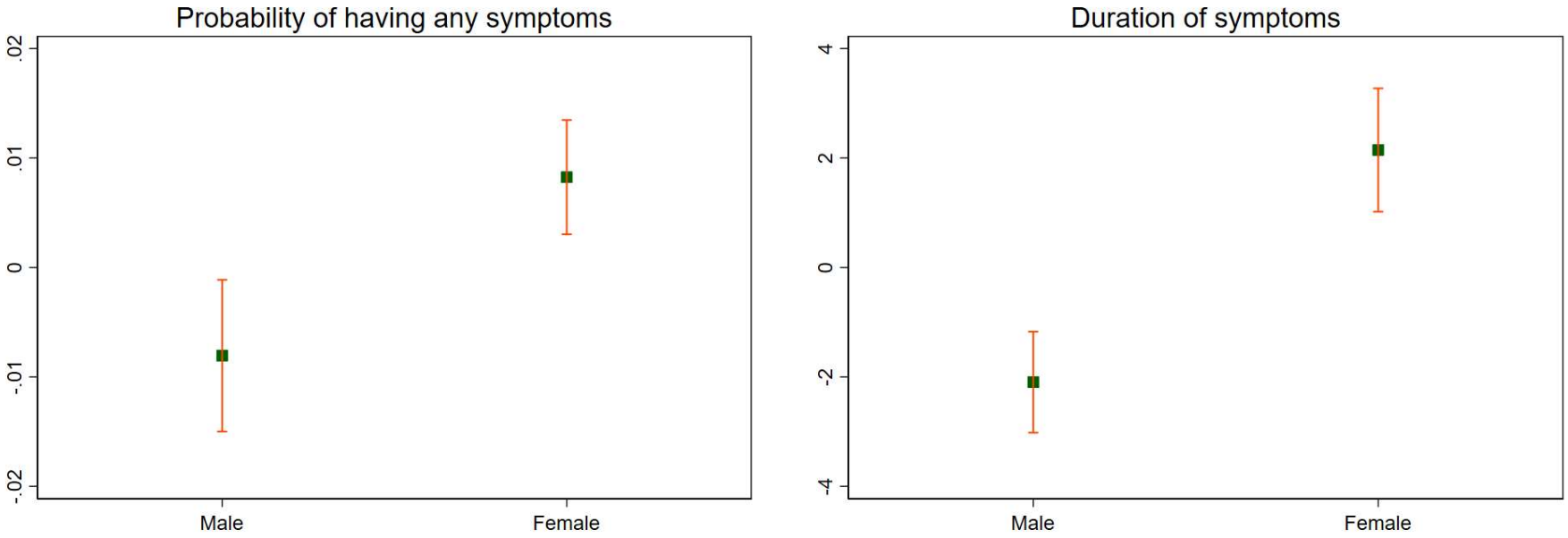
Summary of results (overall associations)

- There are significant associations between having symptoms and experiencing a reduction in working hours or income.
  - Such a relationship is also found for working hours after COVID.

- There are also significant associations between the duration of symptoms and that of a reduction in working hours and income.

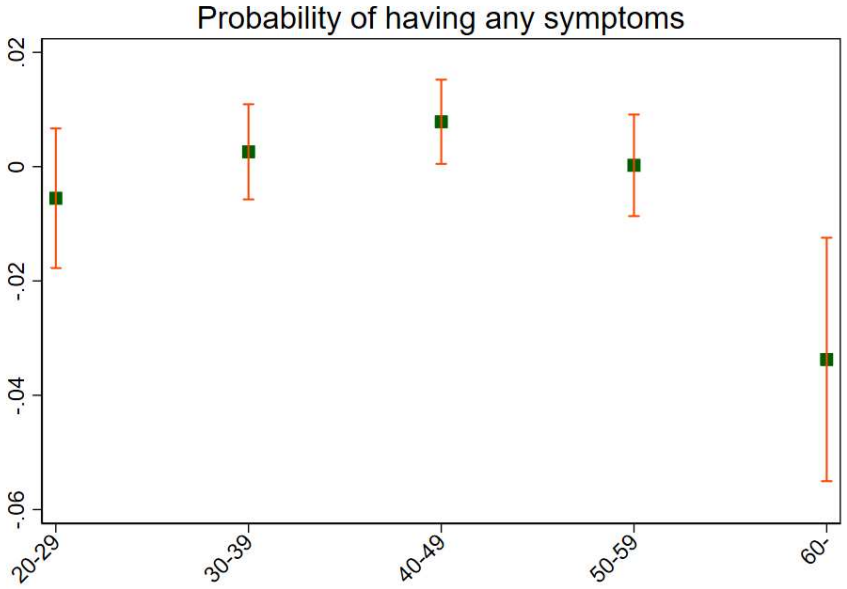
2. By individual type

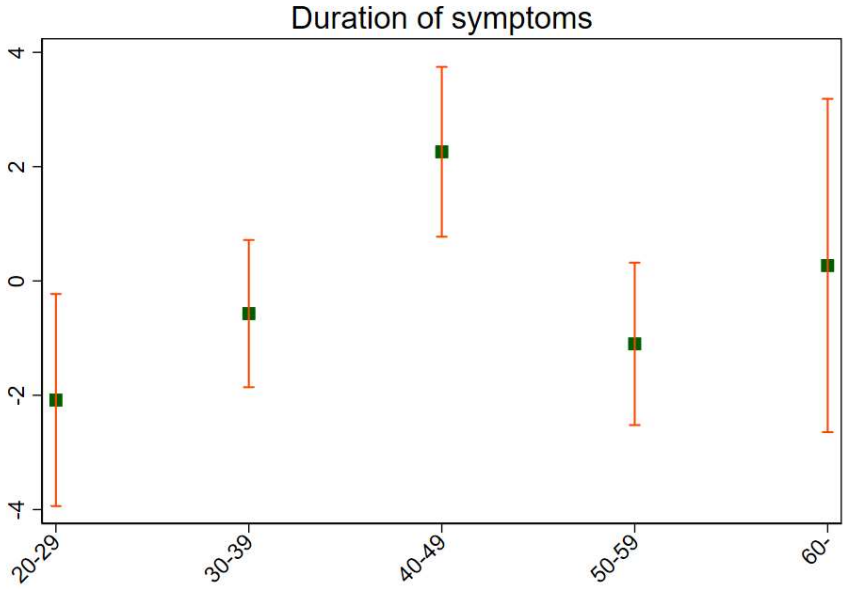
Probability and duration of having symptoms
By gender



- Compared to male workers, female workers are more likely to have COVID-related symptoms (**0.02** pp) and have longer symptoms (**5.95** days) (Table A19).

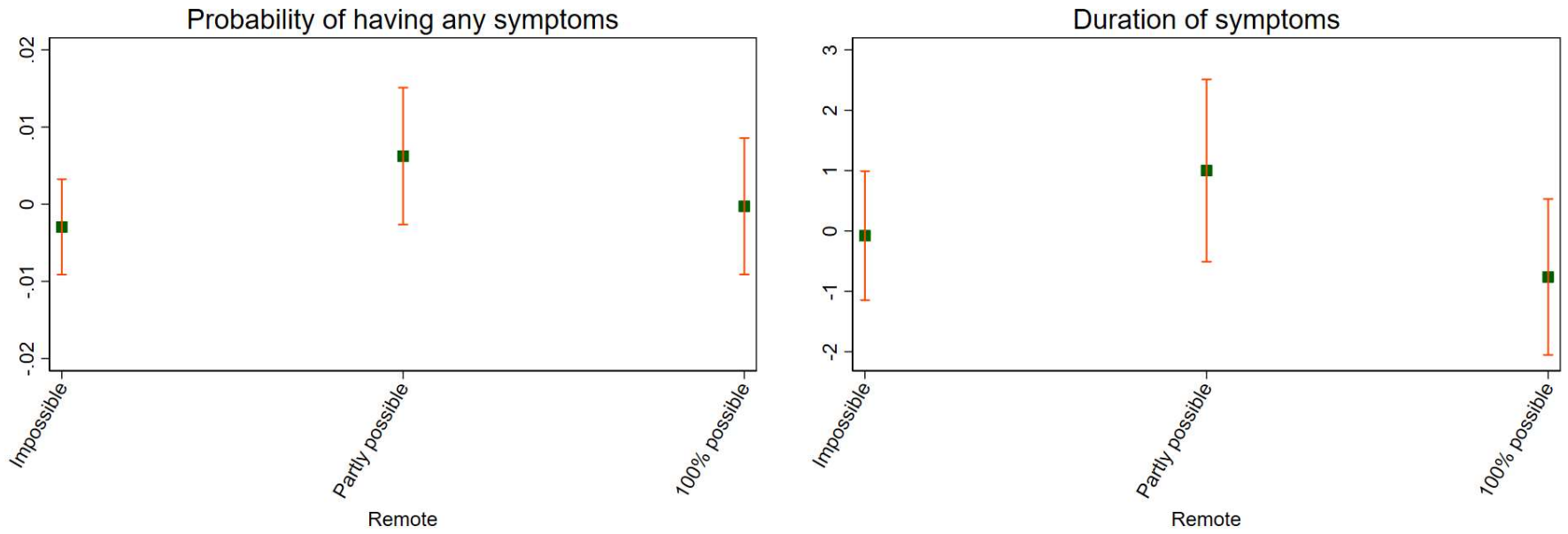
Probability and duration of having symptoms
By age





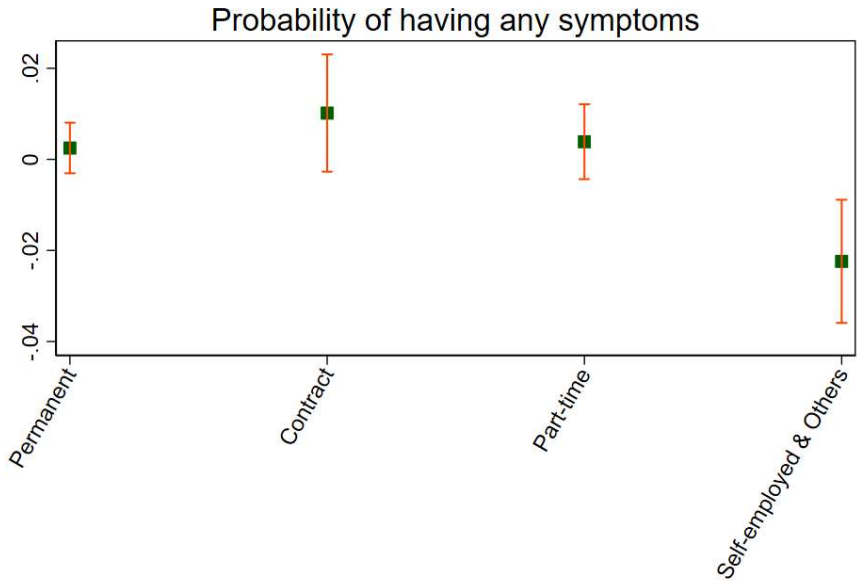
- Compared to workers in 20s, workers in 40s are more likely to have symptoms (**0.01** pp) and have longer symptoms (**4.62** days) (Table A20).
  - Workers in 60s are *less* likely to have symptoms (**0.03** pp).

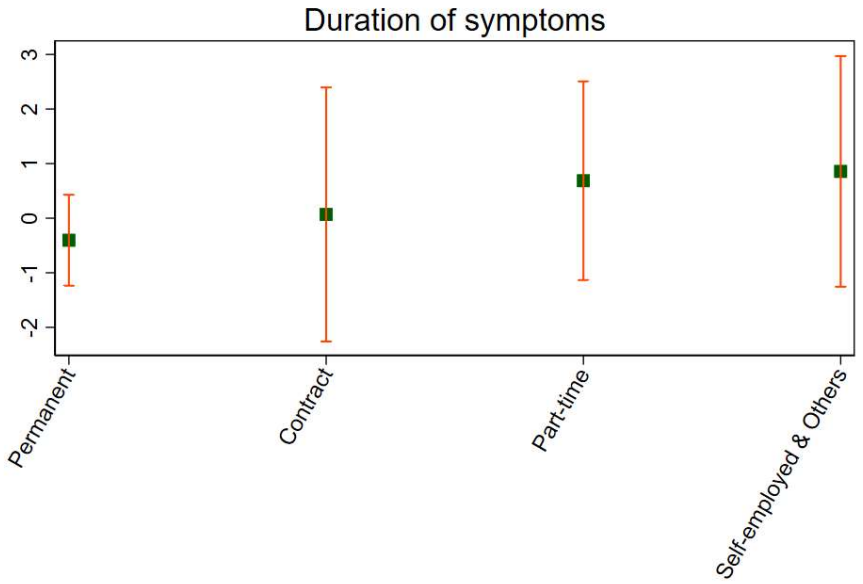
Probability and duration of having symptoms
By access to remote work



- There is no statistical difference between workers with access to remote work and those without (Table A21).

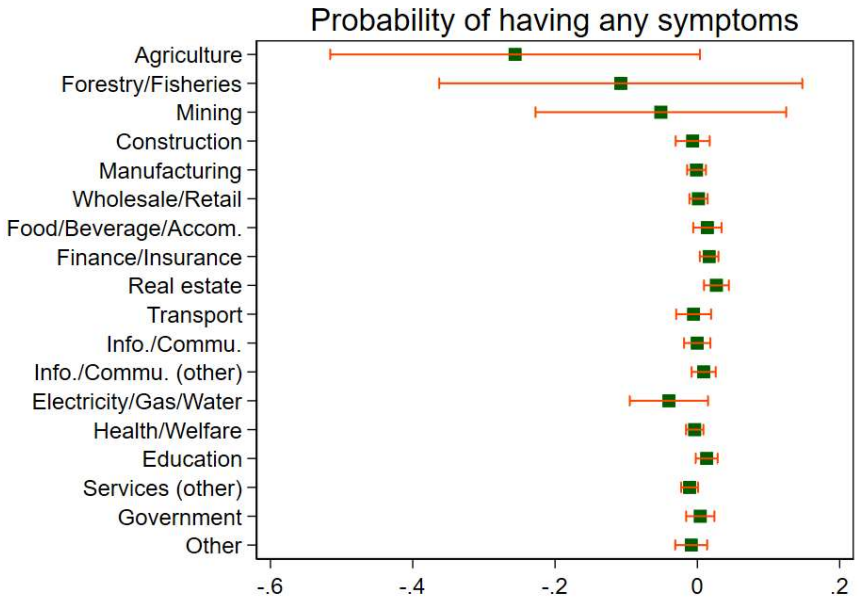
Probability and duration of having symptoms
By employment type

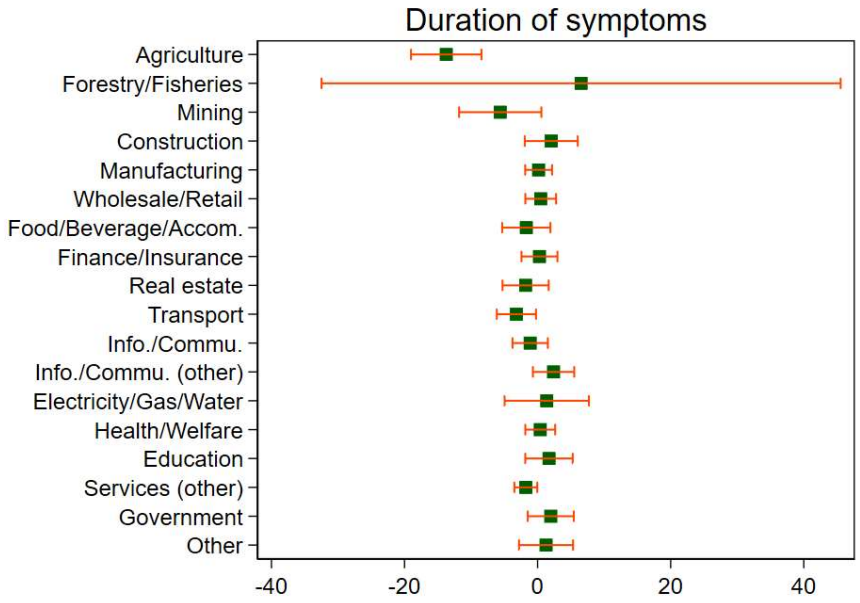




- Self-employed and other workers are *less* likely to have symptoms than permanent workers by **0.03** pp (Table A22).
  - There is no significant difference across employment types in terms of the duration of symptoms.

Probability and duration of having symptoms
By industry





- Workers in food/beverage and accommodation, and transportation sectors are more likely than workers in primary sectors to have symptoms. However, the effects are not particularly larger for the former sectors (Table A23).
  - There is no difference across industries in terms of the duration of symptoms.

Summary of results (so far)

- Individuals whose labor outcomes are affected most are:
  1. Workers without access to remote work
  2. Contract, workers, part-time workers, and self-employed and other workers
  3. Workers in food/beverage and accommodation, and transportation

- Effects on contract, part-time, and self-employed workers and those on workers without access to remote work tend to persist. The duration of the decline is longer for self-employed workers.

- The impact on the probability of a decline in working hours/income by age is mixed, but the impact on the duration of the decline is longer for older workers.

- Although, in general, there are significant associations between symptoms and labor outcomes, especially in the short-run, the differences in the likelihood/duration of having symptoms by gender, age, access to remote work, employment type, or industry do not explain the differential impacts on labor outcomes well.

Q3. Do infection prevention policies (vaccination) alleviate negative effects on labor outcomes?

Effects of vaccination

- Regression model:

$$Y_i = \alpha Vaccine_i + \beta Symptom_i + \gamma Vaccine_i * Symptom_i + \boldsymbol{X}_i\delta + \epsilon_i, \qquad (1)$$

Where Y_i is an outcome variable, $Vaccine_i$is an indicator which takes the value of 1 if individual *i* was vaccinated more than once *before the first infection*, and 0 otherwise, $Symptom_i$ is an indicator which takes the value of 1 if individual *i* had any symptoms *during the first infection,* $\boldsymbol{X}_i$ is a vector of control variables, and ϵ_i is the error term.

  - Controls: Age, gender, education, income in 2019, whether there was any disease under treatment or follow-up, whether living with an elderly person/an infant or toddler, employment type fixed effects (FE), industry FE, region FE, and the year of infection FE
  - Robust standard errors are used.

- The coefficient of interest is γ. We also run regressions without including $Symptom_i$ or $Vaccine_i * Symptom_i$ to understand the effects of vaccination regardless of symptoms.

Summary of results

- Vaccination *per se* does not affect the likelihood of experiencing a reduction in working hours/income *during* COVID. However, it decreases the likelihood of experiencing a reduction in monthly working hours (**0.03** pp) and monthly income (**0.02** pp) *after* COVID, although the latter effect is weak. In addition, it tends to shorten the duration of the reduction in monthly income, but not working hours (Table A24).

- We did not find supporting evidence that vaccination alleviates negative effects on labor outcomes by altering the *probability* of having a symptom (Table A25). However, vaccination tends to reduce the probability of experiencing a reduction in working hours by *shortening the duration of symptoms* (Table A26).

Conclusion and caveats

- By conducting a large-scale survey, this study examined the short- and long-run impact of COVID-19 on labor outcomes.

- We also found that labor outcomes of certain types of workers are affected more than those of others. Policymakers may consider such differential effects when designing infection prevention policies to minimize the economic impacts.

- We found that having symptoms and reduction in working hours/income are related and that vaccination tends to alleviate some of the impacts by shortening the duration of symptoms.

- Caveats: (i) The results of the study is based on the retrospective survey, potentially suffering from recall bias. (ii) We do not conduct causal inference in this study. Any statement in this study should not be interpreted as causal.

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Appendix

Table A1

	Dependent variable:							
	Daily working hours				Daily income			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Female	0.095	0.082	0.070	0.069	0.152	0.062	0.011	0.011
	(0.010)***	(0.012)***	(0.013)***	(0.013)***	(0.009)***	(0.010)***	(0.010)	(0.010)
Controls	no	yes	yes	yes	no	yes	yes	yes
Employment type FE	no	no	yes	yes	no	no	yes	yes
Industry FE	no	no	yes	yes	no	no	yes	yes
Region FE	no	no	no	yes	no	no	no	yes
Infection year FE	no	no	no	yes	no	no	no	yes
Dep. mean (std)	0.454	0.456	0.456	0.456	0.254	0.231	0.231	0.231
	(0.498)	(0.498)	(0.498)	(0.498)	(0.435)	(0.422)	(0.422)	(0.422)
R^2	0.01	0.03	0.03	0.04	0.03	0.14	0.21	0.21
N	9765	8432	8432	8431	9765	8432	8432	8431

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$. The dependent variable for Columns (1)-(4) is the probability of experiencing a reduction in daily working hours during the period of hospitalization or convalescing at home/hotel and for Columns (5)-(8) is the probability of experiencing a reduction in daily income during the same period. Control variables are age, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler.

Table A2

	Dependent variable:							
	Daily working hours				Daily income			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
30s	0.021	0.022	0.021	0.021	−0.037	−0.005	−0.023	−0.022
	(0.017)	(0.019)	(0.019)	(0.019)	(0.015)**	(0.016)	(0.015)	(0.015)
40s	0.027	0.031	0.027	0.028	−0.031	0.002	−0.037	−0.036
	(0.017)	(0.018)*	(0.019)	(0.019)	(0.015)**	(0.015)	(0.015)**	(0.015)**
50s	0.075	0.072	0.066	0.065	−0.001	0.018	−0.029	−0.027
	(0.017)***	(0.019)***	(0.019)***	(0.020)***	(0.015)	(0.016)	(0.016)*	(0.016)*
60s	0.097	0.092	0.089	0.085	−0.008	0.017	−0.059	−0.058
	(0.023)***	(0.026)***	(0.026)***	(0.026)***	(0.021)	(0.022)	(0.021)***	(0.021)***
Controls	no	yes	yes	yes	no	yes	yes	yes
Employment type FE	no	no	yes	yes	no	no	yes	yes
Industry FE	no	no	yes	yes	no	no	yes	yes
Region FE	no	no	no	yes	no	no	no	yes
Infection year FE	no	no	no	yes	no	no	no	yes
Dep. mean (std)	0.454	0.456	0.456	0.456	0.254	0.231	0.231	0.231
	(0.498)	(0.498)	(0.498)	(0.498)	(0.435)	(0.422)	(0.422)	(0.422)
R^2	0.00	0.03	0.03	0.04	0.00	0.14	0.21	0.21
N	9765	8432	8432	8431	9765	8432	8432	8431

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1$,$^{**}p < 0.05$,$^{***}p < 0.01$. The dependent variable for Columns (1)-(4) is the probability of experiencing a reduction in daily working hours during the period of hospitalization or convalescing at home/hotel and for Columns (5)-(8) is the probability of experiencing a reduction in daily income during the same period. Control variables are gender, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler. The omitted category is workers between 20-29 years old.

Table A3

	Dependent variable:							
	Daily working hours				Daily income			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
100% possible	−0.152	−0.132	−0.115	−0.115	−0.286	−0.194	−0.133	−0.133
	(0.013)***	(0.014)***	(0.015)***	(0.016)***	(0.009)***	(0.010)***	(0.011)***	(0.011)***
Partly possible	−0.055	−0.036	−0.024	−0.023	−0.222	−0.147	−0.079	−0.081
	(0.013)***	(0.014)**	(0.015)	(0.015)	(0.011)***	(0.011)***	(0.012)***	(0.012)***
Controls	no	yes	yes	yes	no	yes	yes	yes
Control mean (std):								
Dep. mean (std)	0.456	0.456	0.456	0.456	0.231	0.231	0.231	0.231
	(0.498)	(0.498)	(0.498)	(0.498)	(0.422)	(0.422)	(0.422)	(0.422)
R^2	0.02	0.03	0.03	0.04	0.09	0.14	0.21	0.21
N	8432	8432	8432	8431	8432	8432	8432	8431

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$. The dependent variable for Columns (1)-(4) is the probability of experiencing a reduction in daily working hours during the period of hospitalization or convalescing at home/hotel and for Columns (5)-(8) is the probability of experiencing a reduction in daily income during the same period. Control variables are age, gender, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, and whether living with an elderly person/an infant or toddler. The omitted category is workers without access to remote work.

Table A4

	Dependent variable:							
	Daily working hours				Daily income			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Contract worker	0.012	−0.019	−0.024	−0.024	0.114	0.081	0.077	0.078
	(0.018)	(0.018)	(0.018)	(0.018)	(0.016)***	(0.015)***	(0.015)***	(0.015)***
Part-time worker	0.125	0.056	0.051	0.051	0.413	0.324	0.307	0.306
	(0.014)***	(0.016)***	(0.016)***	(0.016)***	(0.013)***	(0.015)***	(0.015)***	(0.015)***
Self-employed	0.013	−0.013	−0.010	−0.009	0.261	0.215	0.214	0.213
	(0.015)	(0.015)	(0.016)	(0.016)	(0.014)***	(0.014)***	(0.015)***	(0.015)***
Controls	no	yes	yes	yes	no	yes	yes	yes
Employment type FE	no	no	no	no	no	no	no	no
Industry FE	no	no	yes	yes	no	no	yes	yes
Region FE	no	no	no	yes	no	no	no	yes
Infection year FE	no	no	no	yes	no	no	no	yes
Dep. mean (std)	0.454	0.454	0.454	0.454	0.254	0.254	0.254	0.254
	(0.498)	(0.498)	(0.498)	(0.498)	(0.435)	(0.435)	(0.435)	(0.435)
R^2	0.01	0.02	0.03	0.04	0.14	0.16	0.18	0.19
N	9765	9765	9765	9765	9765	9765	9765	9765

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$. The dependent variable for Columns (1)-(4) is the probability of experiencing a reduction in daily working hours during the period of hospitalization or convalescing at home/hotel and for Columns (5)-(8) is the probability of experiencing a reduction in daily income during the same period. Control variables are age, gender education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler. The omitted category is permanent workers.

Table A5

	Dependent variable:							
	Daily working hours				Daily income			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Construction	0.222	0.159	0.165	0.170	0.068	0.003	0.050	0.044
	(0.070)***	(0.075)**	(0.074)**	(0.080)**	(0.060)	(0.062)	(0.061)	(0.063)
Manufacturing	0.205	0.138	0.141	0.143	−0.029	−0.031	0.000	−0.004
	(0.068)***	(0.073)*	(0.072)**	(0.077)*	(0.057)	(0.060)	(0.058)	(0.060)
Wholesale/Retail	0.204	0.096	0.095	0.090	0.156	0.045	0.045	0.040
	(0.068)***	(0.073)	(0.072)	(0.078)	(0.058)***	(0.061)	(0.059)	(0.061)
Food/Beverage/Accom.	0.292	0.238	0.228	0.227	0.333	0.223	0.159	0.153
	(0.070)***	(0.077)***	(0.076)***	(0.081)***	(0.061)***	(0.065)***	(0.063)**	(0.065)**
Finance/Insurance	0.246	0.176	0.180	0.181	−0.007	−0.015	0.010	0.006
	(0.069)***	(0.074)**	(0.073)**	(0.078)**	(0.058)	(0.061)	(0.059)	(0.061)
Real estate	0.185	0.121	0.125	0.128	0.033	0.029	0.057	0.050
	(0.071)***	(0.076)	(0.076)*	(0.081)	(0.060)	(0.063)	(0.061)	(0.063)
Transport	0.221	0.123	0.128	0.124	0.215	0.114	0.148	0.141
	(0.071)***	(0.076)	(0.075)*	(0.080)	(0.061)***	(0.064)*	(0.063)**	(0.064)**
Info./Commu.	0.158	0.122	0.125	0.127	−0.017	0.009	0.031	0.025
	(0.068)**	(0.072)*	(0.071)*	(0.077)*	(0.057)	(0.060)	(0.058)	(0.060)
Electricity/Gas/Water	0.217	0.176	0.180	0.185	0.042	0.038	0.057	0.051
	(0.082)***	(0.086)**	(0.086)**	(0.090)**	(0.068)	(0.070)	(0.069)	(0.070)
Health/Welfare	0.294	0.155	0.159	0.162	0.208	0.071	0.105	0.099
	(0.068)***	(0.073)**	(0.072)**	(0.078)**	(0.058)***	(0.061)	(0.060)*	(0.062)
Education	0.326	0.194	0.197	0.197	0.104	0.002	0.014	0.006
	(0.070)***	(0.076)**	(0.075)***	(0.080)**	(0.060)*	(0.063)	(0.061)	(0.063)
Services (other)	0.243	0.124	0.125	0.123	0.187	0.058	0.063	0.058
	(0.067)***	(0.072)*	(0.071)*	(0.077)	(0.058)***	(0.060)	(0.059)	(0.061)
Government	0.225	0.139	0.145	0.148	−0.029	−0.071	−0.033	−0.038
	(0.070)***	(0.075)*	(0.074)*	(0.080)*	(0.059)	(0.061)	(0.060)	(0.061)
Other	0.209	0.148	0.151	0.145	0.114	0.039	0.053	0.049
	(0.069)***	(0.076)*	(0.075)**	(0.081)*	(0.059)*	(0.063)	(0.061)	(0.063)
Controls	no	yes	yes	yes	no	yes	yes	yes
Employment type FE	no	no	yes	yes	no	no	yes	yes
Industry FE	no	no	no	no	no	no	no	no
Region FE	no	no	no	yes	no	no	no	yes
Infection year FE	no	no	no	yes	no	no	no	yes
Dep. mean (std)	0.454	0.456	0.456	0.456	0.254	0.231	0.231	0.231
	(0.498)	(0.498)	(0.498)	(0.498)	(0.435)	(0.422)	(0.422)	(0.422)
R^2	0.01	0.03	0.03	0.04	0.06	0.16	0.21	0.21
N	9765	8432	8432	8431	9765	8432	8432	8431

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1$,$^{**}p < 0.05$,$^{***}p < 0.01$. The dependent variable for Columns (1)-(4) is the probability of experiencing a reduction in daily working hours during the period of hospitalization or convalescing at home/hotel and for Columns (5)-(8) is the probability of experiencing a reduction in daily income during the same period. Control variables are age, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler. The omitted category is primary sectors (Agriculture, Forestry/Fisheries, and Mining). Information/Communication (other) and Information/Communication are combined.

Table A6

	Dependent variable:							
	Monthly working hours				Monthly income			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Female	0.057	0.027	0.009	0.008	0.050	0.017	−0.002	−0.001
	(0.008)***	(0.009)***	(0.009)	(0.009)	(0.007)***	(0.007)**	(0.008)	(0.008)
Controls	no	yes	yes	yes	no	yes	yes	yes
Employment type FE	no	no	yes	yes	no	no	yes	yes
Industry FE	no	no	yes	yes	no	no	yes	yes
Region FE	no	no	no	yes	no	no	no	yes
Infection year FE	no	no	no	yes	no	no	no	yes
Dep. mean (std)	0.179	0.163	0.163	0.163	0.132	0.114	0.114	0.114
	(0.384)	(0.369)	(0.369)	(0.369)	(0.339)	(0.318)	(0.318)	(0.318)
R^2	0.01	0.03	0.04	0.05	0.01	0.05	0.07	0.07
N	9765	8432	8432	8431	9765	8432	8432	8431

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$. The dependent variable for Columns (1)-(4) is the probability of experiencing a reduction in monthly working hours during a month after the period of hospitalization or convalescing at home/hotel and for Columns (5)-(8) is the probability of experiencing a reduction in monthly income during the same period. Control variables are age, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler.

Table A7

	Dependent variable:							
	Monthly working hours				Monthly income			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
30s	−0.017	0.002	−0.004	−0.001	−0.012	0.006	−0.001	0.000
	(0.013)	(0.014)	(0.014)	(0.014)	(0.012)	(0.012)	(0.012)	(0.012)
40s	−0.010	0.002	−0.010	−0.007	−0.007	0.004	−0.010	−0.009
	(0.013)	(0.014)	(0.014)	(0.014)	(0.011)	(0.012)	(0.012)	(0.012)
50s	0.014	0.024	0.010	0.011	0.015	0.018	0.002	0.003
	(0.013)	(0.015)*	(0.015)	(0.015)	(0.012)	(0.013)	(0.013)	(0.013)
60s	0.015	0.022	−0.004	−0.006	0.005	0.021	−0.007	−0.008
	(0.018)	(0.020)	(0.020)	(0.020)	(0.016)	(0.017)	(0.018)	(0.018)
Controls	no	yes	yes	yes	no	yes	yes	yes
Employment type FE	no	no	yes	yes	no	no	yes	yes
Industry FE	no	no	yes	yes	no	no	yes	yes
Region FE	no	no	no	yes	no	no	no	yes
Infection year FE	no	no	no	yes	no	no	no	yes
Dep. mean (std)	0.179	0.163	0.163	0.163	0.132	0.114	0.114	0.114
	(0.384)	(0.369)	(0.369)	(0.369)	(0.339)	(0.318)	(0.318)	(0.318)
R^2	0.00	0.03	0.04	0.05	0.00	0.05	0.07	0.07
N	9765	8432	8432	8431	9765	8432	8432	8431

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$. The dependent variable for Columns (1)-(4) is the probability of experiencing a reduction in monthly working hours during a month after the period of hospitalization or convalescing at home/hotel and for Columns (5)-(8) is the probability of experiencing a reduction in monthly income during the same period. Control variables are gender, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler. The omitted category is workers between 20-29 years old.

Table A8

	Dependent variable:							
	Monthly working hours				Monthly income			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
100% possible	−0.112	−0.075	−0.055	−0.056	−0.126	−0.084	−0.061	−0.060
	(0.009)***	(0.010)***	(0.011)***	(0.011)***	(0.007)***	(0.008)***	(0.009)***	(0.009)***
Partly possible	−0.058	−0.028	−0.005	−0.007	−0.094	−0.060	−0.034	−0.035
	(0.010)***	(0.011)***	(0.011)	(0.011)	(0.008)***	(0.009)***	(0.009)***	(0.009)***
Controls	no	yes	yes	yes	no	yes	yes	yes
Control mean (std):								
Dep. mean (std)	0.163	0.163	0.163	0.163	0.114	0.114	0.114	0.114
	(0.369)	(0.369)	(0.369)	(0.369)	(0.318)	(0.318)	(0.318)	(0.318)
R^2	0.02	0.03	0.04	0.05	0.03	0.05	0.07	0.07
N	8432	8432	8432	8431	8432	8432	8432	8431

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$. The dependent variable for Columns (1)-(4) is the probability of experiencing a reduction in monthly working hours during a month after the period of hospitalization or convalescing at home/hotel and for Columns (5)-(8) is the probability of experiencing a reduction in monthly income during the same period. Control variables are age, gender, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, and whether living with an elderly person/an infant or toddler. The omitted category is workers without access to remote work.

Table A9

	Dependent variable:							
	Monthly working hours				Monthly income			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Contract worker	0.052	0.036	0.034	0.034	0.047	0.030	0.029	0.029
	(0.014)***	(0.014)**	(0.014)**	(0.014)**	(0.012)***	(0.012)**	(0.012)**	(0.012)**
Part-time worker	0.157	0.118	0.107	0.107	0.161	0.119	0.112	0.113
	(0.012)***	(0.013)***	(0.013)***	(0.013)***	(0.011)***	(0.012)***	(0.012)***	(0.013)***
Self-employed	0.159	0.136	0.141	0.137	0.169	0.142	0.145	0.144
	(0.013)***	(0.013)***	(0.014)***	(0.014)***	(0.012)***	(0.013)***	(0.013)***	(0.013)***
Controls	no	yes	yes	yes	no	yes	yes	yes
Employment type FE	no	no	no	no	no	no	no	no
Industry FE	no	no	yes	yes	no	no	yes	yes
Region FE	no	no	no	yes	no	no	no	yes
Infection year FE	no	no	no	yes	no	no	no	yes
Dep. mean (std)	0.179	0.179	0.179	0.179	0.132	0.132	0.132	0.132
	(0.384)	(0.384)	(0.384)	(0.384)	(0.339)	(0.339)	(0.339)	(0.339)
R^2	0.03	0.04	0.05	0.06	0.05	0.06	0.07	0.08
N	9765	9765	9765	9765	9765	9765	9765	9765

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1$,$^{**}p < 0.05$,$^{***}p < 0.01$. The dependent variable for Columns (1)-(4) is the probability of experiencing a reduction in monthly working hours during a month after the period of hospitalization or convalescing at home/hotel and for Columns (5)-(8) is the probability of experiencing a reduction in monthly income during the same period. Control variables are age, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler. The omitted category is permanent workers.

Table A10

	Dependent variable:							
	Monthly working hours				Monthly income			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Construction	0.037	−0.020	−0.003	−0.011	0.064	−0.013	0.004	0.004
	(0.060)	(0.069)	(0.069)	(0.072)	(0.045)	(0.058)	(0.055)	(0.059)
Manufacturing	−0.028	−0.047	−0.036	−0.044	−0.008	−0.034	−0.022	−0.024
	(0.057)	(0.067)	(0.068)	(0.070)	(0.042)	(0.057)	(0.054)	(0.058)
Wholesale/Retail	0.055	−0.004	−0.004	−0.012	0.070	−0.003	−0.003	−0.002
	(0.058)	(0.068)	(0.068)	(0.071)	(0.043)	(0.057)	(0.054)	(0.058)
Food/Beverage/Accom.	0.155	0.096	0.074	0.060	0.158	0.058	0.035	0.031
	(0.061)**	(0.072)	(0.072)	(0.075)	(0.046)***	(0.061)	(0.059)	(0.062)
Finance/Insurance	0.008	−0.008	0.001	−0.007	0.009	−0.014	−0.005	−0.005
	(0.058)	(0.068)	(0.068)	(0.071)	(0.043)	(0.057)	(0.054)	(0.058)
Real estate	−0.003	−0.016	−0.006	−0.012	0.046	0.017	0.027	0.027
	(0.060)	(0.070)	(0.070)	(0.072)	(0.045)	(0.059)	(0.056)	(0.060)
Transport	0.063	−0.007	0.005	−0.009	0.130	0.045	0.057	0.056
	(0.060)	(0.070)	(0.070)	(0.073)	(0.046)***	(0.060)	(0.057)	(0.061)
Info./Commu.	−0.020	−0.021	−0.013	−0.023	−0.004	−0.011	−0.003	−0.004
	(0.057)	(0.067)	(0.068)	(0.070)	(0.042)	(0.056)	(0.053)	(0.058)
Electricity/Gas/Water	−0.025	−0.049	−0.043	−0.044	0.040	0.027	0.034	0.034
	(0.065)	(0.073)	(0.073)	(0.076)	(0.052)	(0.064)	(0.062)	(0.066)
Health/Welfare	0.045	−0.023	−0.011	−0.017	0.095	0.019	0.031	0.030
	(0.058)	(0.068)	(0.068)	(0.071)	(0.043)**	(0.058)	(0.055)	(0.059)
Education	0.022	−0.040	−0.037	−0.045	0.016	−0.037	−0.033	−0.034
	(0.059)	(0.069)	(0.070)	(0.072)	(0.044)	(0.058)	(0.055)	(0.059)
Services (other)	0.078	−0.003	−0.001	−0.011	0.112	0.017	0.018	0.018
	(0.057)	(0.067)	(0.068)	(0.070)	(0.043)***	(0.057)	(0.054)	(0.058)
Government	−0.031	−0.067	−0.054	−0.058	−0.000	−0.044	−0.030	−0.030
	(0.059)	(0.069)	(0.069)	(0.071)	(0.044)	(0.058)	(0.055)	(0.059)
Other	0.002	−0.054	−0.049	−0.056	0.058	0.005	0.010	0.013
	(0.058)	(0.069)	(0.069)	(0.072)	(0.044)	(0.059)	(0.056)	(0.060)
Controls	no	yes	yes	yes	no	yes	yes	yes
Employment type FE	no	no	yes	yes	no	no	yes	yes
Industry FE	no	no	no	no	no	no	no	no
Region FE	no	no	no	yes	no	no	no	yes
Infection year FE	no	no	no	yes	no	no	no	yes
Dep. mean (std)	0.179	0.163	0.163	0.163	0.132	0.114	0.114	0.114
	(0.384)	(0.369)	(0.369)	(0.369)	(0.339)	(0.318)	(0.318)	(0.318)
R^2	0.01	0.04	0.04	0.05	0.02	0.06	0.07	0.07
N	9765	8432	8432	8431	9765	8432	8432	8431

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$. The dependent variable for Columns (1)-(4) is the probability of experiencing a reduction in monthly working hours during a month after the period of hospitalization or convalescing at home/hotel and for Columns (5)-(8) is the probability of experiencing a reduction in monthly income during the same period. Control variables are age, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler. The omitted category is primary sectors (Agriculture, Forestry/Fisheries, and Mining). Information/Communication (other) and Information/Communication are combined.

Table A11

	Dependent variable: Duration of reduction in	
	Working hours	Income
	(1)	(2)
Female	0.125	−0.479
	(0.179)	(0.313)
Controls	yes	yes
Employment type FE	yes	yes
Industry FE	yes	yes
Region FE	yes	yes
Infection year FE	yes	yes
Dep. mean (std)	0.788	0.671
	(0.409)	(0.470)
R^2	0.11	0.20
N	1367	961

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$. The dependent variable for Column (1) is the duration of a reduction in monthly working hours after the period of hospitalization or convalescing at home/hotel and for Column (2) is the duration of a reduction in monthly income during the same period. Control variables are age, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler.

Table A12

	Dependent variable: Duration of reduction in	
	Working hours	Income
	(1)	(2)
30s	0.215	0.439
	(0.170)	(0.296)
40s	0.585	1.505
	(0.210)***	(0.383)***
50s	0.805	1.510
	(0.230)***	(0.365)***
60s	0.459	1.921
	(0.287)	(0.615)***
Controls	yes	yes
Employment type FE	yes	yes
Industry FE	yes	yes
Region FE	yes	yes
Infection year FE	yes	yes
Dep. mean (std)	1.879	2.416
	(2.934)	(3.438)
R^2	0.12	0.20
N	1367	961

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$. The dependent variable for Column (1) is the duration of a reduction in monthly working hours after the period of hospitalization or convalescing at home/hotel and for Column (2) is the duration of a reduction in monthly income during the same period. Control variables are gender, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler. The omitted category is workers between 20-29 years old.

Table A13

	Dependent variable: Duration of reduction in	
	Working hours	Income
	(1)	(2)
100% possible	0.266	0.562
	(0.359)	(0.620)
Partly possible	−0.241	0.336
	(0.169)	(0.395)
Controls	yes	yes
Control mean (std):		
Dep. mean (std)	1.879	2.416
	(2.934)	(3.438)
R^2	0.12	0.20
N	1367	961

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$. The dependent variable for Column (1) is the duration of a reduction in monthly working hours after the period of hospitalization or convalescing at home/hotel and for Column (2) is the duration of a reduction in monthly income during the same period. Control variables are age, gender, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, and whether living with an elderly person/an infant or toddler. The omitted category is workers without access to remote work.

Table A14

	Dependent variable: Duration of reduction in	
	Working hours	Income
	(1)	(2)
Contract worker	0.016	0.187
	(0.235)	(0.478)
Part-time worker	−0.025	−0.357
	(0.218)	(0.336)
Self-employed	0.927	0.845
	(0.266)***	(0.403)**
Controls	yes	yes
Employment type FE	no	no
Industry FE	yes	yes
Region FE	yes	yes
Infection year FE	yes	yes
Dep. mean (std)	0.787	0.686
	(0.409)	(0.464)
R^2	0.16	0.20
N	1748	1288

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$. The dependent variable for Column (1) is the duration of a reduction in monthly working hours after the period of hospitalization or convalescing at home/hotel and for Column (2) is the duration of a reduction in monthly income during the same period. Control variables are age, gender, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler. The omitted category is permanent workers.

Table A15

	Dependent variable: Duration of reduction in	
	Working hours	Income
	(1)	(2)
Construction	0.276	0.449
	(0.623)	(2.422)
Manufacturing	−0.177	0.691
	(0.486)	(2.442)
Wholesale/Retail	−0.108	−0.298
	(0.502)	(2.289)
Food/Beverage/Accom.	0.850	0.175
	(0.758)	(2.349)
Finance/Insurance	0.035	1.228
	(0.529)	(2.412)
Real estate	0.703	1.864
	(0.840)	(2.488)
Transport	0.671	1.099
	(0.606)	(2.415)
Info./Commu.	0.111	0.132
	(0.487)	(2.347)
Electricity/Gas/Water	−0.432	−0.902
	(0.542)	(2.406)
Health/Welfare	−0.180	−0.108
	(0.512)	(2.295)
Education	−0.111	0.087
	(0.516)	(2.341)
Services (other)	0.135	−0.360
	(0.512)	(2.290)
Government	0.911	0.366
	(0.785)	(2.475)
Other	0.478	0.003
	(0.632)	(2.342)
Controls	yes	yes
Employment type FE	yes	yes
Industry FE	no	no
Region FE	yes	yes
Infection year FE	yes	yes
Dep. mean (std)	0.788	0.672
	(0.409)	(0.470)
R^2	0.11	0.20
N	1369	962

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1$,$^{**}p < 0.05$,$^{***}p < 0.01$. The dependent variable for Column (1) is the duration of a reduction in monthly working hours after the period of hospitalization or convalescing at home/hotel and for Column (2) is the duration of a reduction in monthly income during the same period. Control variables are age, gender, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler. The omitted category is primary sectors (Agriculture, Forestry/Fisheries, and Mining). Information/Communication (other) and Information/Communication are combined.

Table A16

	Dependent variable:							
	Daily working hours				Daily income			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Any symptom	0.195	0.170	0.168	0.157	0.075	0.050	0.044	0.047
	(0.020)***	(0.023)***	(0.023)***	(0.024)***	(0.018)***	(0.019)***	(0.018)**	(0.019)**
Controls	no	yes	yes	yes	no	yes	yes	yes
Employment type FE	no	no	yes	yes	no	no	yes	yes
Industry FE	no	no	yes	yes	no	no	yes	yes
Region FE	no	no	no	yes	no	no	no	yes
Infection year FE	no	no	no	yes	no	no	no	yes
Dep. mean (std)	0.454	0.456	0.456	0.456	0.254	0.231	0.231	0.231
	(0.498)	(0.498)	(0.498)	(0.498)	(0.435)	(0.422)	(0.422)	(0.422)
R^2	0.01	0.03	0.04	0.05	0.00	0.14	0.21	0.21
N	9765	8432	8432	8431	9765	8432	8432	8431

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$. The dependent variable for Columns (1)-(4) is the probability of experiencing a reduction in daily working hours during the period of hospitalization or convalescing at home/hotel and for Columns (5)-(8) is the probability of experiencing a reduction in daily income during the same period. "Any symptom" is a dummy, which takes the value of one if an individual had any COVID-related symptom and zero otherwise. Control variables are age, gender, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler.

Table A17

	Dependent variable:							
	Monthly working hours				Monthly income			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Any symptom	0.064	0.058	0.053	0.059	0.026	0.017	0.016	0.023
	(0.015)***	(0.015)***	(0.015)***	(0.016)***	(0.014)*	(0.015)	(0.015)	(0.015)
Controls	no	yes	yes	yes	no	yes	yes	yes
Employment type FE	no	no	yes	yes	no	no	yes	yes
Industry FE	no	no	yes	yes	no	no	yes	yes
Region FE	no	no	no	yes	no	no	no	yes
Infection year FE	no	no	no	yes	no	no	no	yes
Dep. mean (std)	0.179	0.163	0.163	0.163	0.132	0.114	0.114	0.114
	(0.384)	(0.369)	(0.369)	(0.369)	(0.339)	(0.318)	(0.318)	(0.318)
R^2	0.00	0.03	0.04	0.05	0.00	0.05	0.07	0.07
N	9765	8432	8432	8431	9765	8432	8432	8431

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$. The dependent variable for Columns (1)-(4) is the probability of experiencing a reduction in monthly working hours during a month after the period of hospitalization or convalescing at home/hotel and for Columns (5)-(8) is the probability of experiencing a reduction in monthly income during the same period. "Any symptom" is a dummy, which takes the value of one if an individual had any COVID-related symptom and zero otherwise. Control variables are age, gender, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler.

Table A18

	Dependent variable: Duration of reduction in	
	Working hours	Income
	(1)	(2)
Days with symptoms	0.008	0.014
	(0.003)***	(0.004)***
Controls	yes	yes
Employment type FE	yes	yes
Industry FE	yes	yes
Region FE	yes	yes
Infection year FE	yes	yes
Dep. mean (std)	1.879	2.416
	(2.934)	(3.438)
R^2	0.13	0.22
N	1367	961

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$. The dependent variable for Column (1) is the duration of a reduction in monthly working hours after the period of hospitalization or convalescing at home/hotel and for Column (2) is the duration of a reduction in monthly income during the same period. "Days with symptoms" is the number of days when an individual had any COVID-related symptom. Control variables are age, gender, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler.

Table A19

	Dependent variable: Symptoms	
	Dummy	Duration
	(1)	(2)
Female	0.023	5.947
	(0.005)***	(0.921)***
Controls	yes	yes
Employment type FE	yes	yes
Industry FE	yes	yes
Region FE	yes	yes
Infection year FE	yes	yes
Dep. mean (std)	0.063	0.063
	(0.243)	(0.243)
R^2	0.05	0.04
N	8431	8431

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$. The dependent variable for Column (1) is a dummy, which takes the value of one if individuals have any symptoms and for Column (2) is the duration of symptoms in days. Control variables are age, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler.

Table A20

	Dependent variable: Symptoms	
	Dummy	Duration
	(1)	(2)
30s	0.009	1.724
	(0.008)	(1.215)
40s	0.013	4.620
	(0.008)*	(1.259)***
50s	0.004	1.219
	(0.008)	(1.319)
60s	−0.032	2.631
	(0.013)**	(1.873)
Controls	yes	yes
Employment type FE	yes	yes
Industry FE	yes	yes
Region FE	yes	yes
Infection year FE	yes	yes
Dep. mean (std)	0.063	0.063
	(0.243)	(0.243)
R^2	0.05	0.04
N	8431	8431

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$. The dependent variable for Column (1) is a dummy, which takes the value of one if individuals have any symptoms and for Column (2) is the duration of symptoms in days. Control variables are gender, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler. The omitted category is workers between 20-29 years old.

Table A21

	Dependent variable: Symptoms	
	Dummy	Duration
	(1)	(2)
100% possible	0.002	−0.918
	(0.007)	(1.054)
Partly possible	0.008	1.024
	(0.007)	(1.077)
Controls	yes	yes
Control mean (std):		
Dep. mean (std)	0.063	0.063
	(0.243)	(0.243)
R^2	0.05	0.04
N	8431	8431

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$. The dependent variable for Column (1) is a dummy, which takes the value of one if individuals have any symptoms and for Column (2) is the duration of symptoms in days. Control variables are age, gender, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, and whether living with an elderly person/an infant or toddler. The omitted category is workers between 20-29 years old.

Table A22

	Dependent variable: Symptoms	
	Dummy	Duration
	(1)	(2)
Contract worker	0.007	0.685
	(0.007)	(1.299)
Part-time worker	−0.000	1.648
	(0.007)	(1.221)
Self-employed	−0.029	1.684
	(0.008)***	(1.288)
Controls	yes	yes
Employment type FE	no	no
Industry FE	yes	yes
Region FE	yes	yes
Infection year FE	yes	yes
Dep. mean (std)	0.080	0.080
	(0.271)	(0.271)
R^2	0.07	0.04
N	9765	9765

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$. The dependent variable for Column (1) is a dummy, which takes the value of one if individuals have any symptoms and for Column (2) is the duration of symptoms in days. Control variables are age, gender, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler. The omitted category is permanent workers.

Table A23

	Dependent variable: Symptoms	
	Dummy	Duration
	(1)	(2)
Construction	0.147	8.043
	(0.072)**	(6.083)
Manufacturing	0.153	6.219
	(0.071)**	(5.848)
Wholesale/Retail	0.155	6.334
	(0.071)**	(5.865)
Food/Beverage/Accom.	0.168	3.907
	(0.072)**	(6.031)
Finance/Insurance	0.171	6.327
	(0.071)**	(5.906)
Real estate	0.181	4.172
	(0.071)**	(6.002)
Transport	0.148	2.623
	(0.072)**	(5.964)
Info./Commu.	0.159	6.727
	(0.071)**	(5.847)
Electricity/Gas/Water	0.114	7.410
	(0.076)	(6.541)
Health/Welfare	0.151	6.311
	(0.071)**	(5.893)
Education	0.168	7.760
	(0.072)**	(6.084)
Services (other)	0.143	4.102
	(0.071)**	(5.830)
Government	0.158	8.027
	(0.072)**	(5.997)
Other	0.145	7.217
	(0.072)**	(6.084)
Controls	yes	yes
Employment type FE	yes	yes
Industry FE	no	no
Region FE	yes	yes
Infection year FE	yes	yes
Dep. mean (std)	0.063	0.063
	(0.243)	(0.243)
R^2	0.05	0.04
N	8431	8431

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1$,$^{**}p < 0.05$,$^{***}p < 0.01$. The dependent variable for Column (1) is a dummy, which takes the value of one if individuals have any symptoms and for Column (2) is the duration of symptoms in days. Control variables are age, gender, education, income in 2019, the number of vaccine doses before the first infection, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler. The omitted category is primary sectors (Agriculture, Forestry/Fisheries, and Mining). Information/Communication (other) and Information/Communication are combined.

Table A24

	Dependent variable:					
	Probability of reduction					
	During COVID		After COVID		Duration of reduction	
	Hours	Income	Hours	Income	Hours	Income
	(1)	(2)	(3)	(4)	(5)	(6)
Vaccination (2 or more doses)	0.005	−0.017	−0.025	−0.017	−0.410	−0.950
	(0.014)	(0.012)	(0.011)**	(0.010)*	(0.264)	(0.396)**
Controls	yes	yes	yes	yes	yes	yes
Employment type FE	yes	yes	yes	yes	yes	yes
Industry FE	yes	yes	yes	yes	yes	yes
Region FE	yes	yes	yes	yes	yes	yes
Infection year FE	yes	yes	yes	yes	yes	yes
Dep. mean (std)	0.456	0.231	0.163	0.114	1.879	2.714
	(0.498)	(0.422)	(0.369)	(0.318)	(2.934)	(4.179)
R^2	0.04	0.21	0.05	0.07	0.11	0.20
N	8431	8431	8431	8431	1367	961

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$. The dependent variable for Columns (1) and (3) is the probability of experiencing a reduction in daily working hours during the period of hospitalization or convalescing at home/hotel and monthly working hours during a month after that period, respectively, for Columns (2) and (4) is the probability of experiencing a reduction in daily income during the period of hospitalization or convalescing at home/hotel and monthly income during a month after that period, respectively, and for Columns (5) and (6) is the duration of a reduction in monthly working hours and monthly income after the period of hospitalization or convalescing at home/hotel, respectively. "Vaccination (2 or more doses)" is a dummy, which takes the value of one if an individual had two or more doses before the first infection and zero otherwise. Control variables are age, gender, education, income in 2019, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler.

Table A25

	Dependent variable:					
	Probability of reduction					
	During COVID		After COVID		Duration of reduction	
	Hours	Income	Hours	Income	Hours	Income
	(1)	(2)	(3)	(4)	(5)	(6)
Any symptom	0.178	0.091	0.081	0.037	0.133	−1.211
	(0.044)***	(0.036)**	(0.032)**	(0.030)	(1.047)	(1.741)
Vaccination (2 or more doses)	0.030	0.038	0.001	−0.001	0.115	−1.232
	(0.050)	(0.041)	(0.036)	(0.033)	(1.172)	(2.004)
Any symptom × Vaccination (2 or more doses)	−0.027	−0.058	−0.027	−0.017	−0.542	0.287
	(0.052)	(0.042)	(0.037)	(0.034)	(1.184)	(2.000)
Controls	yes	yes	yes	yes	yes	yes
Employment type FE	yes	yes	yes	yes	yes	yes
Industry FE	yes	yes	yes	yes	yes	yes
Region FE	yes	yes	yes	yes	yes	yes
Infection year FE	yes	yes	yes	yes	yes	yes
Dep. mean (std)	0.456	0.231	0.163	0.114	1.879	2.714
	(0.498)	(0.422)	(0.369)	(0.318)	(2.934)	(4.179)
R^2	0.05	0.21	0.05	0.07	0.12	0.21
N	8431	8431	8431	8431	1367	961

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1, ^{**}p < 0.05, ^{***}p < 0.01$. The dependent variable for Columns (1) and (3) is the probability of experiencing a reduction in daily working hours during the period of hospitalization or convalescing at home/hotel and monthly working hours during a month after that period, respectively, for Columns (2) and (4) is the probability of experiencing a reduction in daily income during the period of hospitalization or convalescing at home/hotel and monthly income during a month after that period, respectively, and for Columns (5) and (6) is the duration of a reduction in monthly working hours and monthly income after the period of hospitalization or convalescing at home/hotel, respectively. "Vaccination (2 or more doses)" is a dummy, which takes the value of one if an individual had two or more doses before the first infection and zero otherwise. "Any symptom" is a dummy, which takes the value of one if an individual had any COVID-related symptom and zero otherwise. Control variables are age, gender, education, income in 2019, whether there was any disease under treatment or follow-up, availability of remote work, and whether living with an elderly person/an infant or toddler.

Table A26

	Dependent variable:					
	Probability of reduction					
	During COVID		After COVID		Duration of reduction	
	Hours	Income	Hours	Income	Hours	Income
	(1)	(2)	(3)	(4)	(5)	(6)
Days with symptoms	0.001	0.001	0.001	0.001	0.011	0.020
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.005)**	(0.008)**
Vaccination (2 or more doses)	0.020	−0.013	−0.011	−0.013	−0.170	−0.577
	(0.016)	(0.012)	(0.012)	(0.011)	(0.293)	(0.441)
Days with symptoms × Vaccination (2 or more doses)	−0.001	−0.000	−0.001	−0.000	−0.005	−0.010
	(0.000)**	(0.000)	(0.000)*	(0.000)	(0.006)	(0.008)
Controls	yes	yes	yes	yes	yes	yes
Employment type FE	yes	yes	yes	yes	yes	yes
Industry FE	yes	yes	yes	yes	yes	yes
Region FE	yes	yes	yes	yes	yes	yes
Infection year FE	yes	yes	yes	yes	yes	yes
Dep. mean (std)	0.456	0.231	0.163	0.114	1.879	2.714
	(0.498)	(0.422)	(0.369)	(0.318)	(2.934)	(4.179)
R^2	0.04	0.22	0.06	0.08	0.13	0.23
N	8431	8431	8431	8431	1367	961

Notes: Robust standard errors are in parentheses. $^{*}p < 0.1$,$^{**}p < 0.05$,$^{***}p < 0.01$. The dependent variable for Columns (1) and (3) is the probability of experiencing a reduction in daily working hours during the period of hospitalization or convalescing at home/hotel and monthly working hours during a month after that period, respectively, for Columns (2) and (4) is the probability of experiencing a reduction in daily income during the period of hospitalization or convalescing at home/hotel and monthly income during a month after that period, respectively, and for Columns (5) and (6) is the duration of a reduction in monthly working hours and monthly income after the period of hospitalization or convalescing at home/hotel, respectively. "Vaccination (2 or more doses)" is a dummy, which takes the value of one if an individual had two or more doses before the first infection and zero otherwise. "Days with symptoms" is the number of days when an individual had any COVID-related symptom. Control variables are age, gender, education, income in 2019, availability of remote work, whether there was any disease under treatment or follow-up, and whether living with an elderly person/an infant or toddler.