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Job Retention During the COVID-19 Pandemic

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Overview

Motivation

Inform the debate about job retention schemes.

- Many countries introduced job retention schemes during the pandemic.
- The concept of these policies is known from the Great Recession.

Questions

An evaluation of the Danish wage compensation scheme for employees of March 2020.

- How many jobs were saved by the scheme?
- To what extent has it retained firm-specific human capital?
- How has it affected furloughed workers' labor income?
- How has it affected labor market mobility?

The Danish Wage Compensation Scheme

Eligibility

- A firm is eligible for wage compensation if would have laid off at least 30 percent of its workforce or more than 50 employees in the absence of the scheme.

Compensation

- Amounts to 75 percent of salaries for white-collar employees (90 percent for blue-collar).
- Monthly cap of DKK 30,000 (USD 4,700) per full-time employee.

Requirements

- In the compensation period, firms must not lay off any workers for reasons related to the pandemic.
- Compensated workers must be furloughed and are not allowed to work for the firm.

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Empirical strategy

Focus

The largest group of furloughed workers who were sent home from March to June 2020.

Method

Matched difference-in-differences and Danish register data.[1]

- First, each furloughed worker is matched with the non-compensated worker that has the closest propensity score (with replacement).

  - Similar pre-pandemic characteristics (e.g. age, children, and educational attainment).
  - Similar ex ante exposure to the COVID-19 shock (industry and occupation).

- Second, a difference-in-differences model is estimated on the matched data.

Note: 1) Results presented in this slide deck are preliminary and based on data available in June 2021. They may change slightly as the data is updated before final publication.

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The preferred estimate indicates that the scheme saved approximately 11,100 jobs

Negative effect on furloughed workers' probability of having an exit from employment.
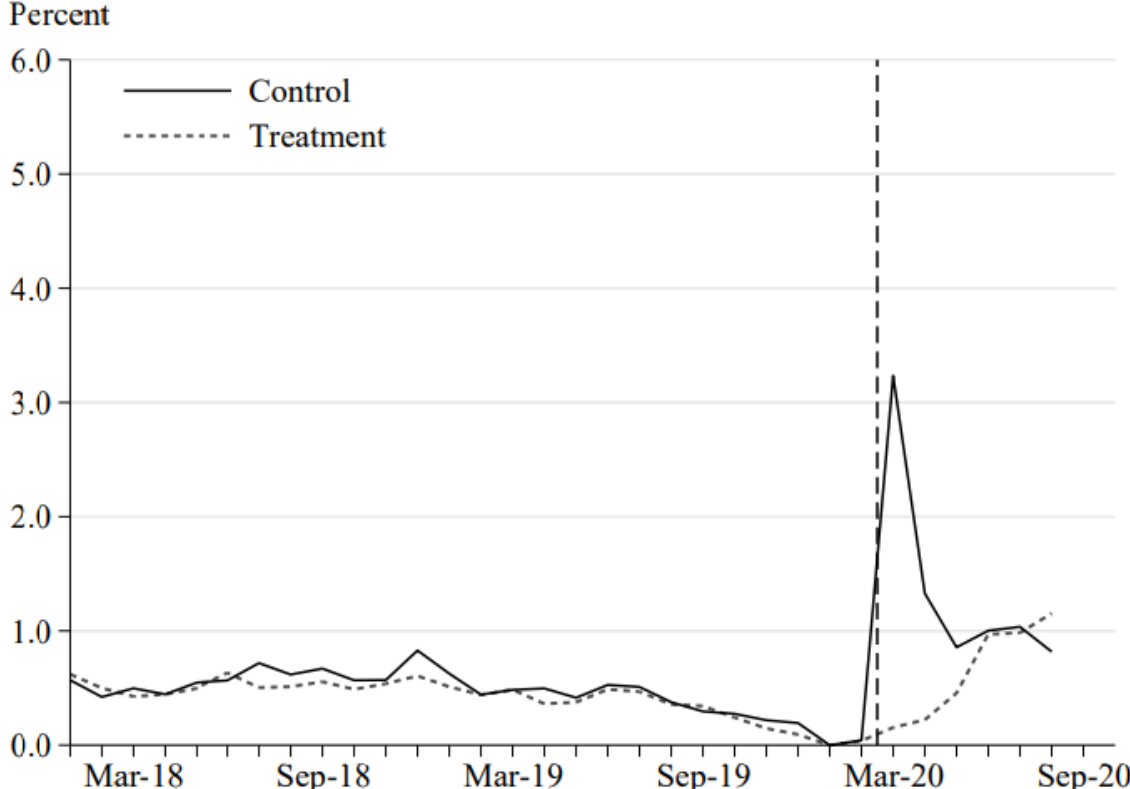
Note: Monthly share of workers that have an exit from employment for the treatment and control groups.
Source: Own calculations based on register data from Statistics Denmark.
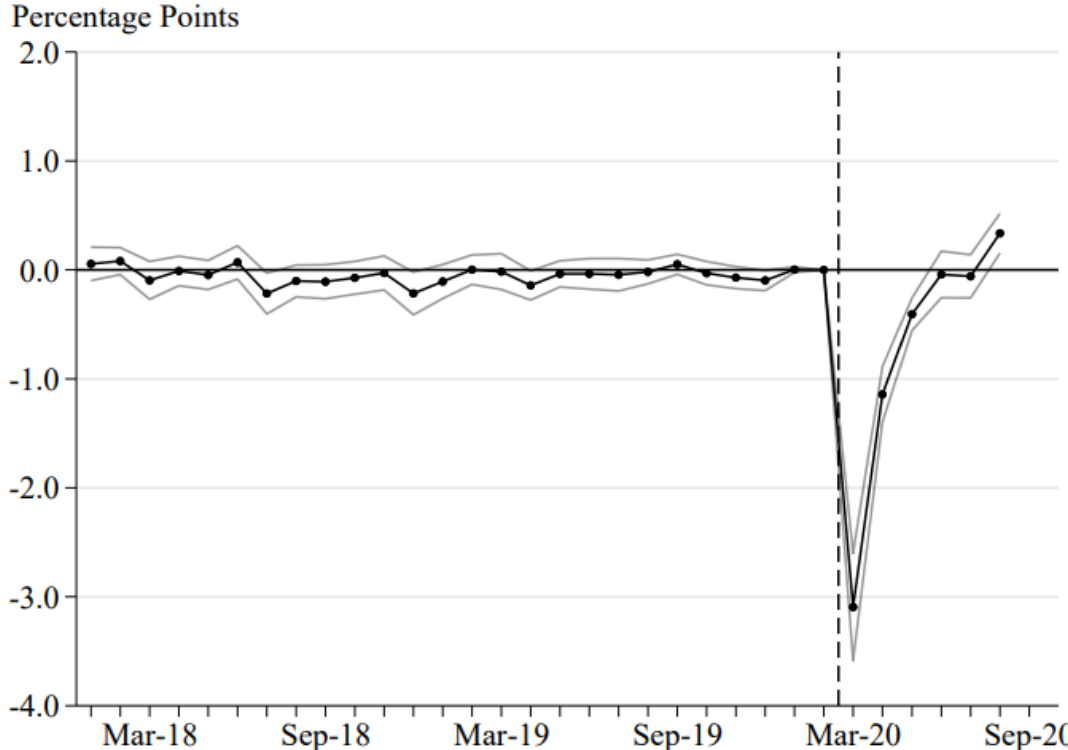
Note: Estimated effects of the scheme on furloughed workers' probability of having an exit from employment.
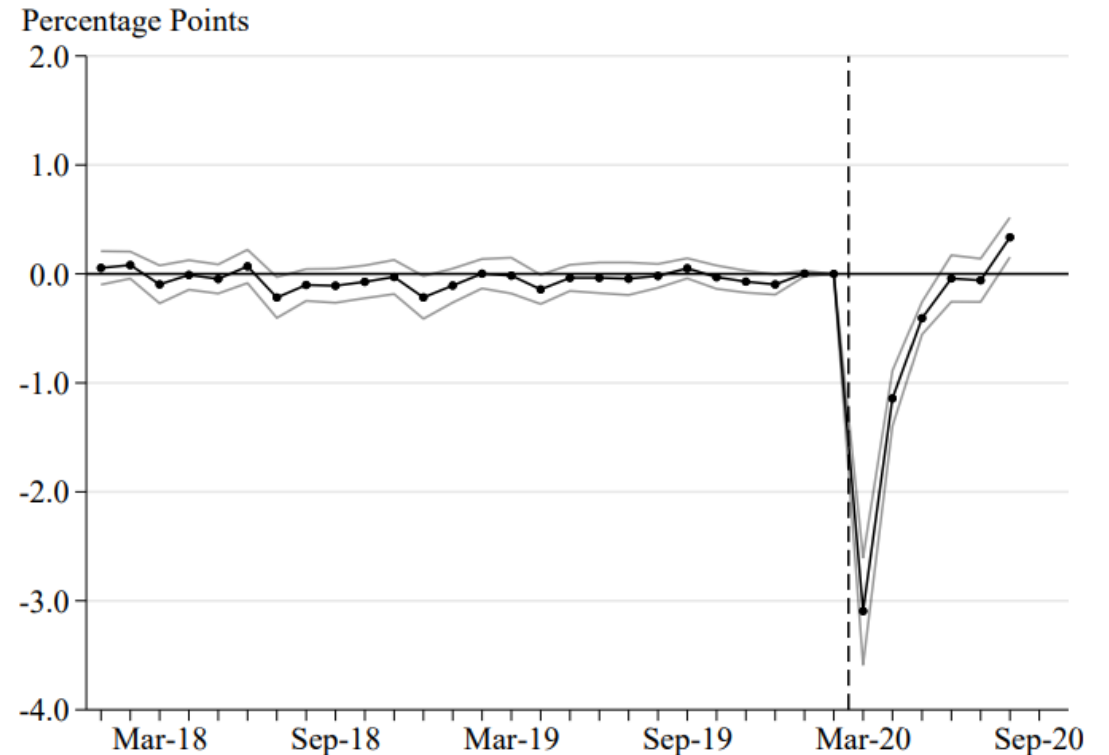**Source:** Own calculations based on register data from Statistics Denmark.

The preferred estimate indicates that the scheme saved approximately 11,100 jobs

Negative effect on furloughed workers' probability of having an exit from employment.

- A reduction of 4.1 percentage points during the compensation period from March to June 2020.

- The scheme prevented about 11,100 job separations.

- The cost per job saved is about DKK 1.1 million (USD 168,000) before taxes.

- In comparison, Chetty et al. (2020) find that the US Paycheck Protection Program implied a cost per job saved of DKK 2.4 million (USD 377,000).

	(1)
$D^{POST} \times D^{TREAT}$	-0.041***
	(0.003)
D^{POST}	0.052***
	(0.002)
D^{TREAT}	-0.001*
	(0.001)
Industry-time FE	Yes
Occupation-time FE	No
Firm Covariates	No
Observations	204,045

* $p<0.05$, ** $p<0.01$, *** $p<0.001$.

Percentage Points

Note: Estimated effects of the scheme on furloughed workers' probability of having an exit from employment.
Source: Own calculations based on register data from Statistics Denmark.

Firm-specific human capital would to some extent be retained even in the absence of the scheme

Job savings are declining in tenure.

- The scheme mainly saved jobs for low-tenured workers (≤ 1 year).

- Firm-specific human capital would, to some extent, be retained anyway…

- … but the scheme may have supported future potential output growth (Caggese et al. (2019)).

Table 3: Heterogenous Effects on the Exit Probability Across Tenure

|	(1) ≤ 1 year	(2)]1; 4] years	(3)]4; 8] years	(4) > 8 years
$D^{POST} \times D^{TREAT}$	-0.052***	-0.038***	-0.024***	-0.014*
	(0.005)	(0.004)	(0.004)	(0.006)
D^{POST}	0.061***	0.043***	0.060***	0.016***
	(0.005)	(0.002)	(0.003)	(0.003)
D^{TREAT}	-0.002	-0.001	0.000	0.000
	(0.001)	(0.001)	(0.000)	(0.000)
Industry-time FE	Yes	Yes	Yes	Yes
Occupation-time FE	No	No	No	No
Firm Covariates	No	No	No	No
Observations	85,439	76,676	33,103	8,827

Firms may negotiate salary reductions with their employees before applying for wage compensation

The scheme has a negative impact on labor income (conditional on employment).

- From March to June 2020, the average monthly labor income of furloughed workers is reduced by 2.1 percent.

- This corresponds to a total loss in earnings of about DKK 2,500 (USD 380).

	(1)
$D^{POST} \times D^{TREAT}$	-0.021***
	(0.006)
D^{POST}	-0.176***
	(0.035)
D^{TREAT}	0.006
	(0.012)
Industry-month FE	Yes
Occupation-month FE	No
Firm Covariates	No
Observations	204,045

* $p<0.05$, ** $p<0.01$, *** $p<0.001$.
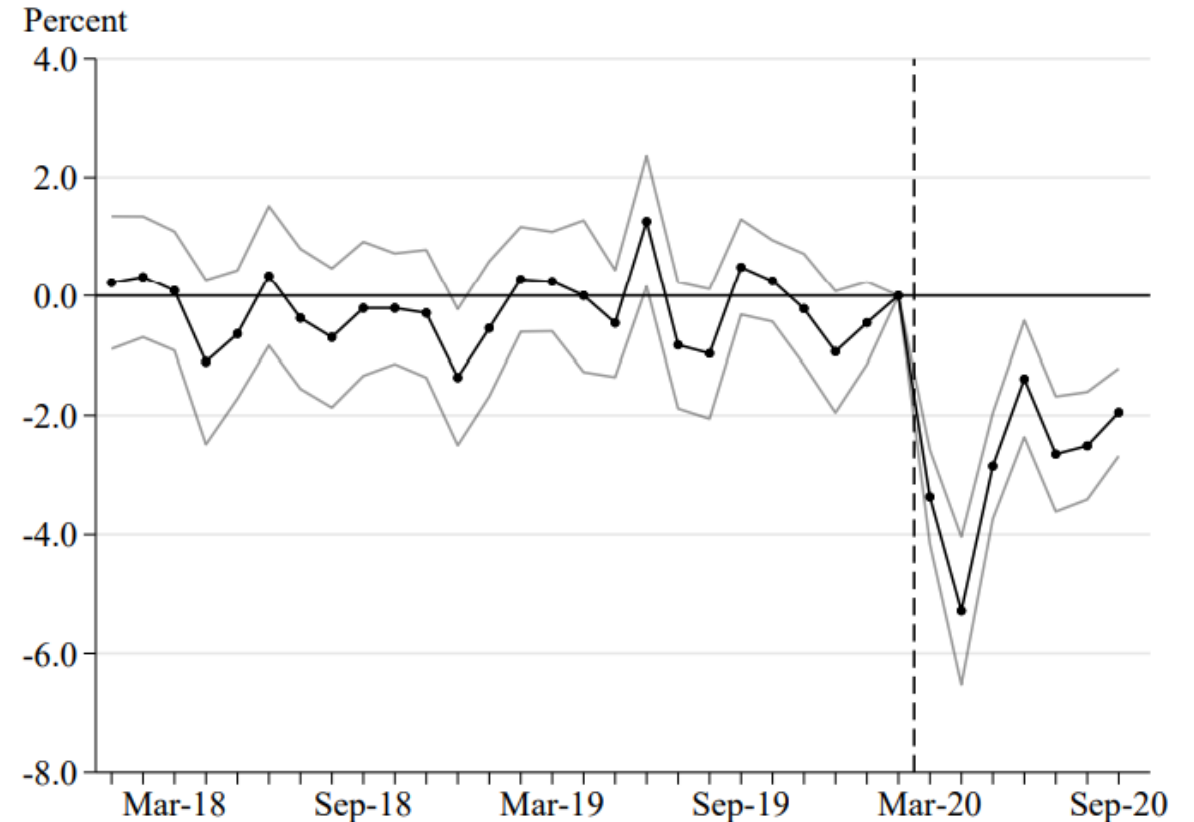
Note: Estimated effects of the scheme on furloughed workers' labor income, conditional on employment.
Source: Own calculations based on register data from Statistics Denmark.

Labor market mobility was basically unaffected

Small negative effect of the scheme on the job-to-job transition probability.

- In the compensation period from March to June 2020, the aggregate response is insignificant.

- It may reflect that the number of vacancies declined drastically during the lockdown.

	(1)
$D^{POST} \times D^{TREAT}$	-0.001
	(0.005)
D^{POST}	0.007
	(0.038)
D^{TREAT}	-0.014**
	(0.004)
Industry-month FE	Yes
Occupation-month FE	No
Firm Covariates	No
Observations	204,045

* $p<0.05$, ** $p<0.01$, *** $p<0.001$.
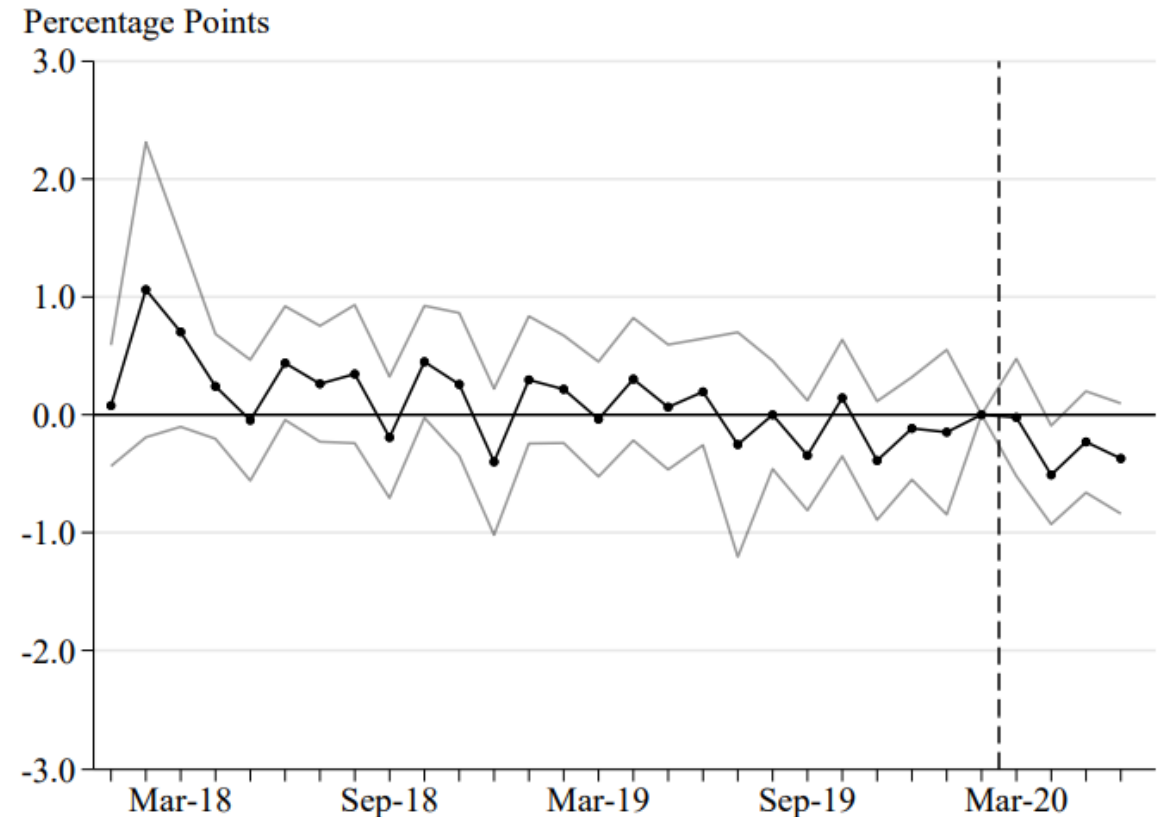
Note: Estimated effects of the scheme on furloughed workers' probability of having a job-to-job transition.
Source: Own calculations based on register data from Statistics Denmark.

Robustness

The results are robust to relevant changes in the model specification and sample selection.

1. Inclusion of occupation-time fixed effects.

2. Matching on additional firm characteristics.

   - Dummies indicating whether a firm had negative, stable, positive, or highly positive average employment growth in 2016-2019.
   - The change in sales from March 2019 to March 2020.
   - Average firm wages in February 2020.

3. Exclusion of workers with several jobs in February 2020.

4. Exclusion of workers that are not employed throughout the compensation period.

5. Considering furloughed workers with all compensation periods instead of only "March to June 2020".

Conclusion

Four insights about the impact of job retention schemes for labor markets during recessions.

- The Danish wage compensation scheme worked as intended by savings jobs for furloughed workers.

- It mainly saved jobs for low-tenured workers.

- Firms and workers may have used the option to negotiate wage cuts before applying for wage compensation.

- Labor market mobility was basically unaffected by the scheme.

References

Caggese, Andrea, Vicente Cuñat, and Daniel Metzger. 2019. "Firing the wrong workers: Financing constraints and labor misallocation. "Journal of Financial Economics,133(3):589–607.

Chetty, Raj, John N. Friedman, Nathaniel Hendren, Michael Stepner, and The Opportunity Insights Team. 2020. "The economic impacts of COVID-19: Evidence from a new public database built using private sector data." NBER Working Paper No. 27431.

Appendix

Common support

Figure 1: Kernel Density Estimates of Propensity Scores

(a) Before Matching
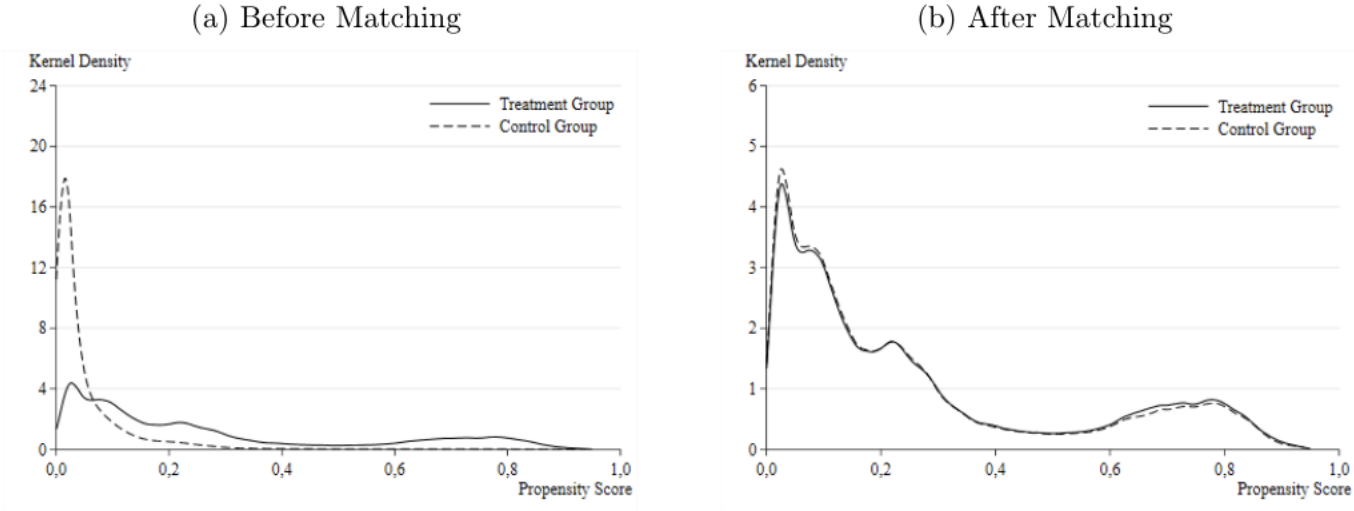
(b) After Matching

Note: Panel (1a) and (1b) show kernel density estimates of propensity scores for furloughed workers (solid) and non-compensated workers (dashed) in the baseline sample before and after matching, respectively. The kernel used is an epanechnikov, and the bandwidth is 0.01.

Source: Own calculations based on Danish administrative register data from Statistics Denmark.
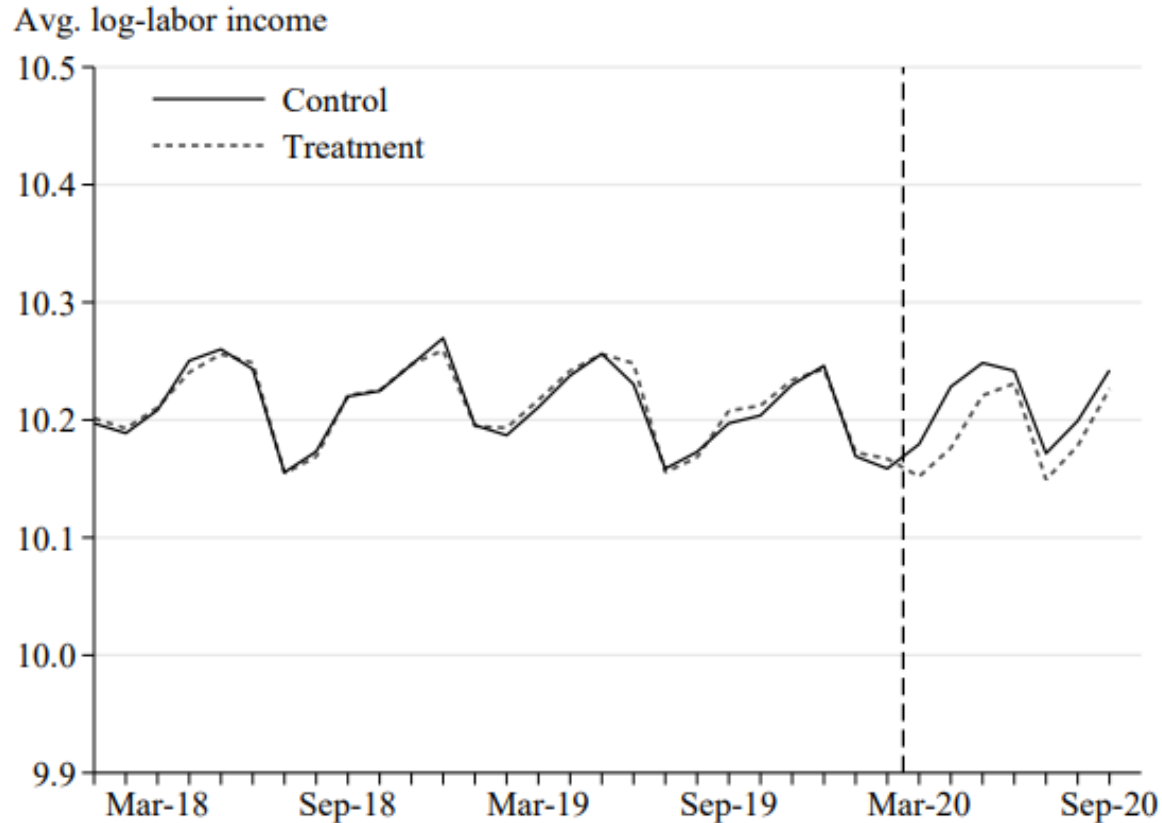
Standardized biases
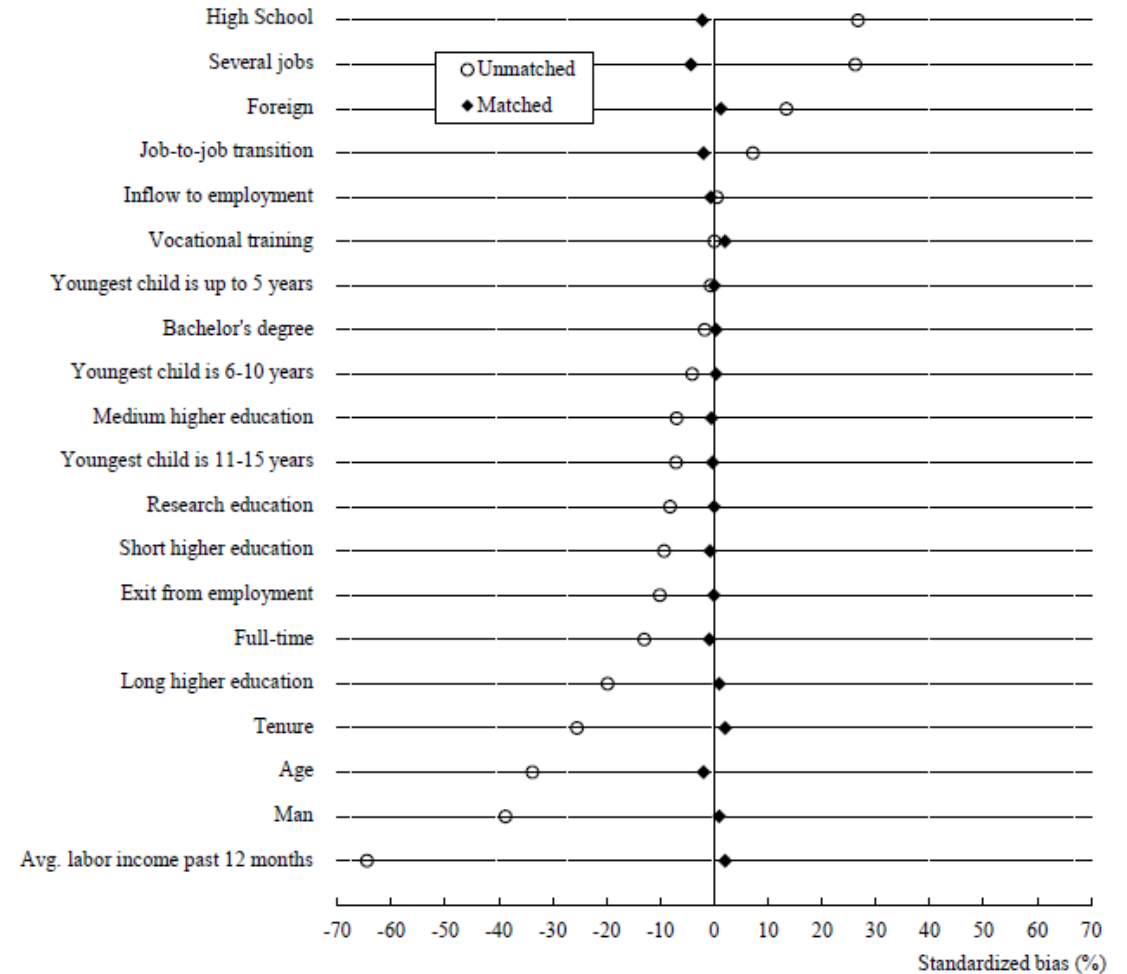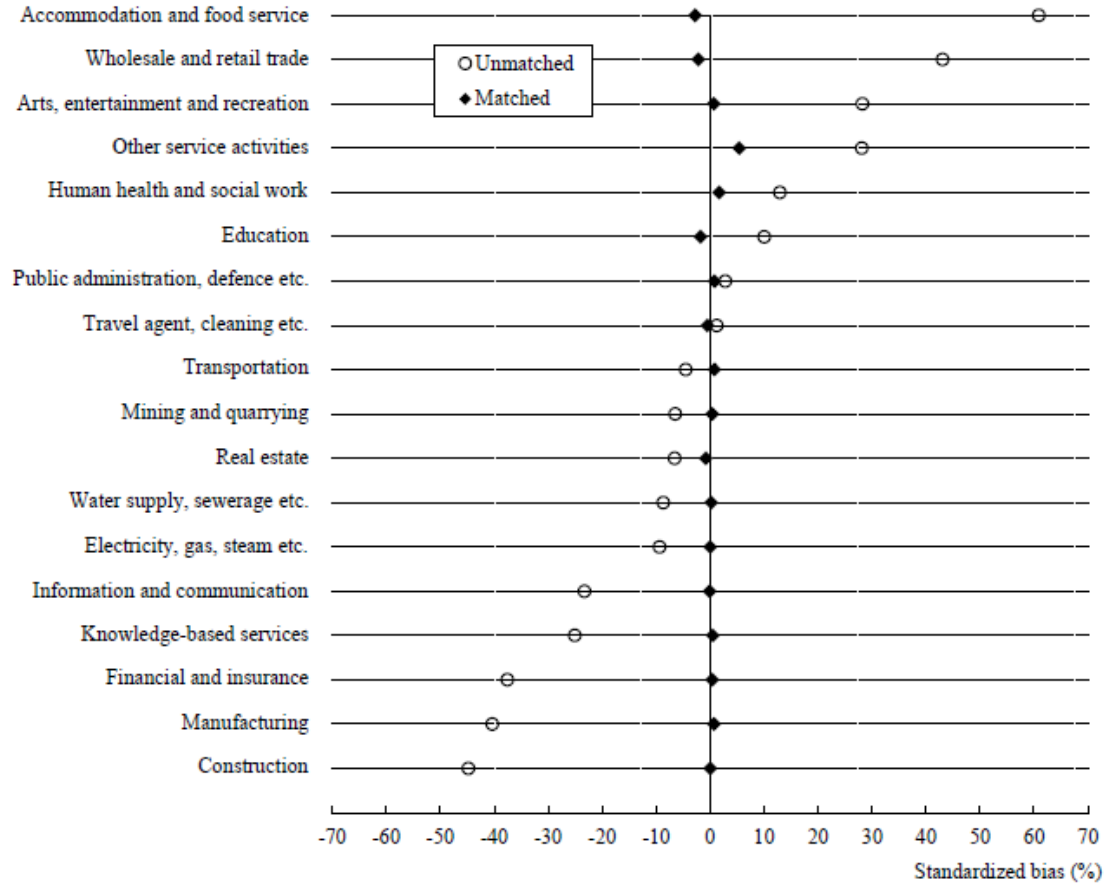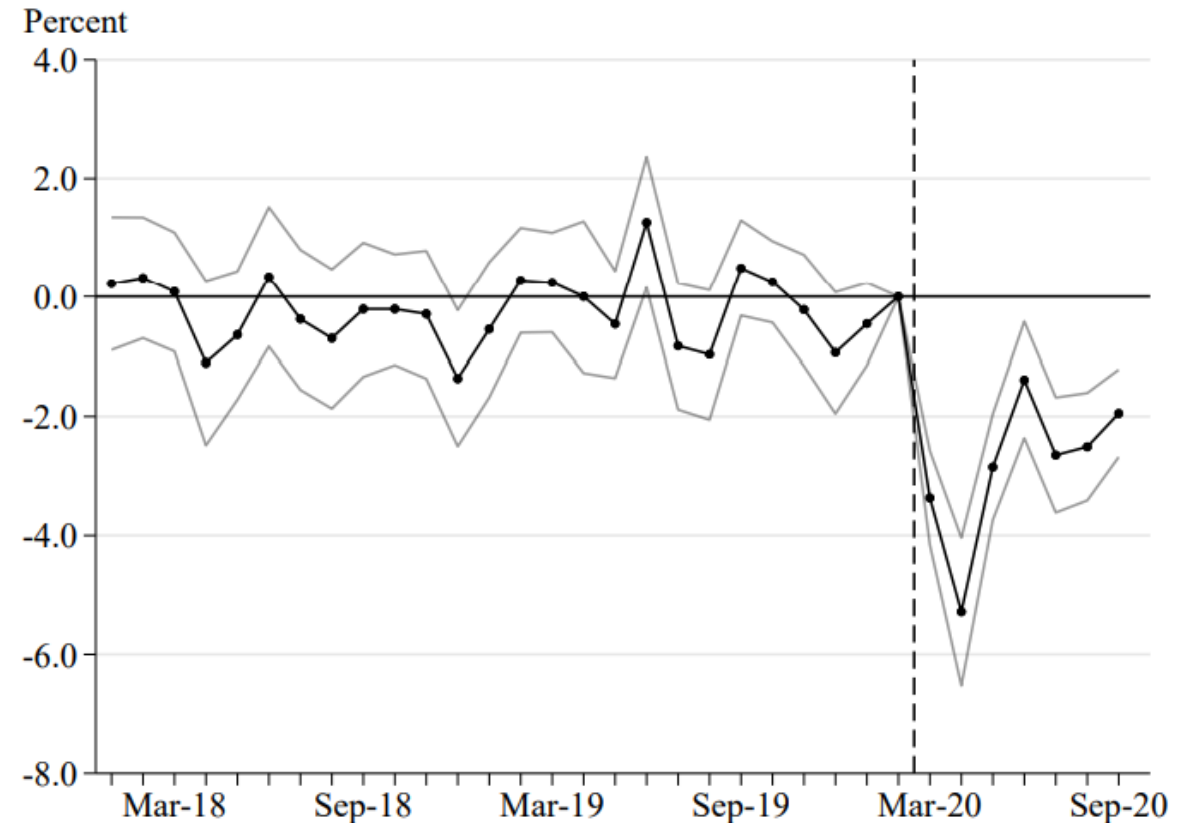
Standardized biases
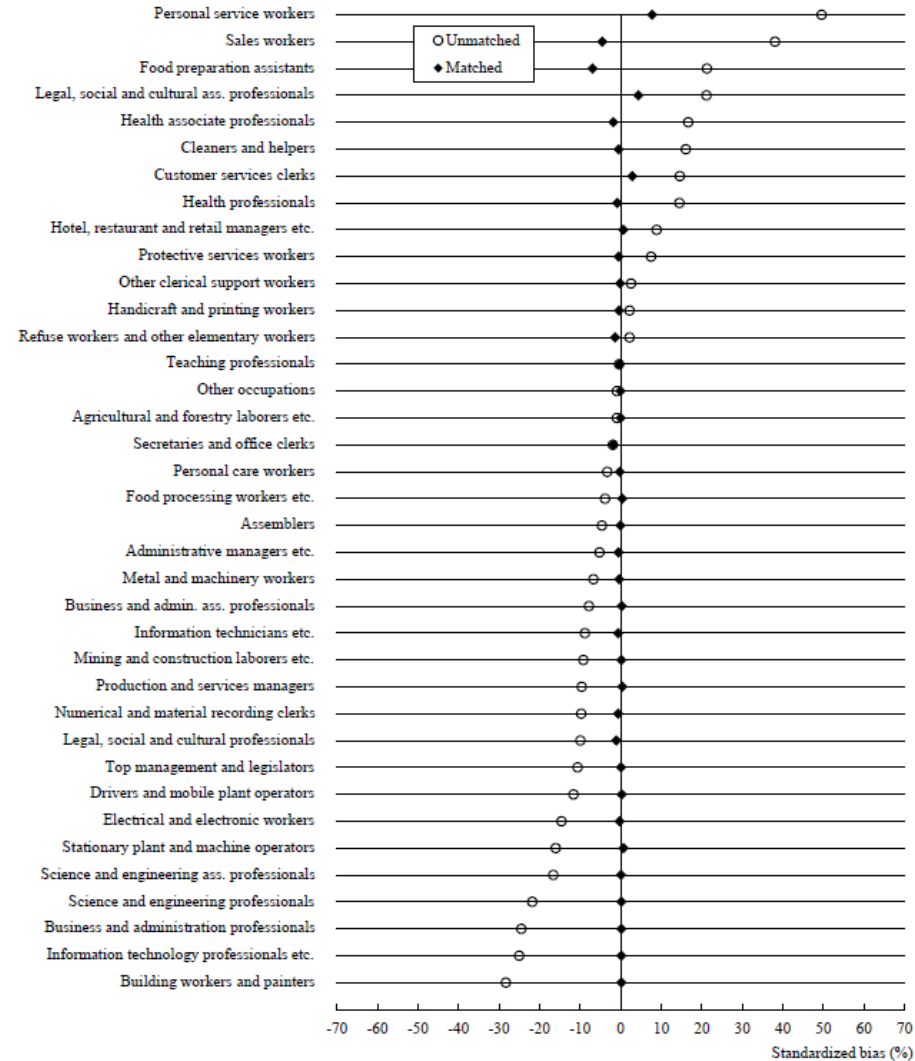
Firms may negotiate salary reductions with their employees before applying for wage compensation
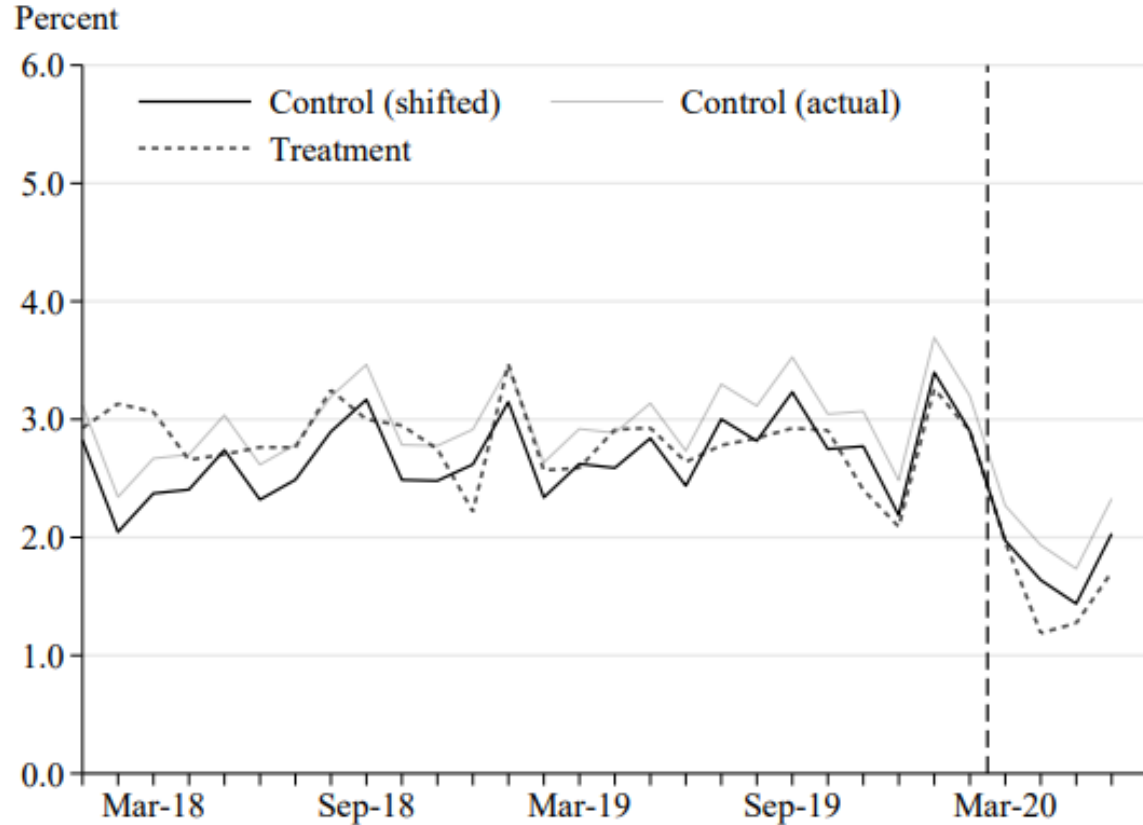

Note: The average monthly log-labor income for the treatment and control groups.
Source: Own calculations based on register data from Statistics Denmark.
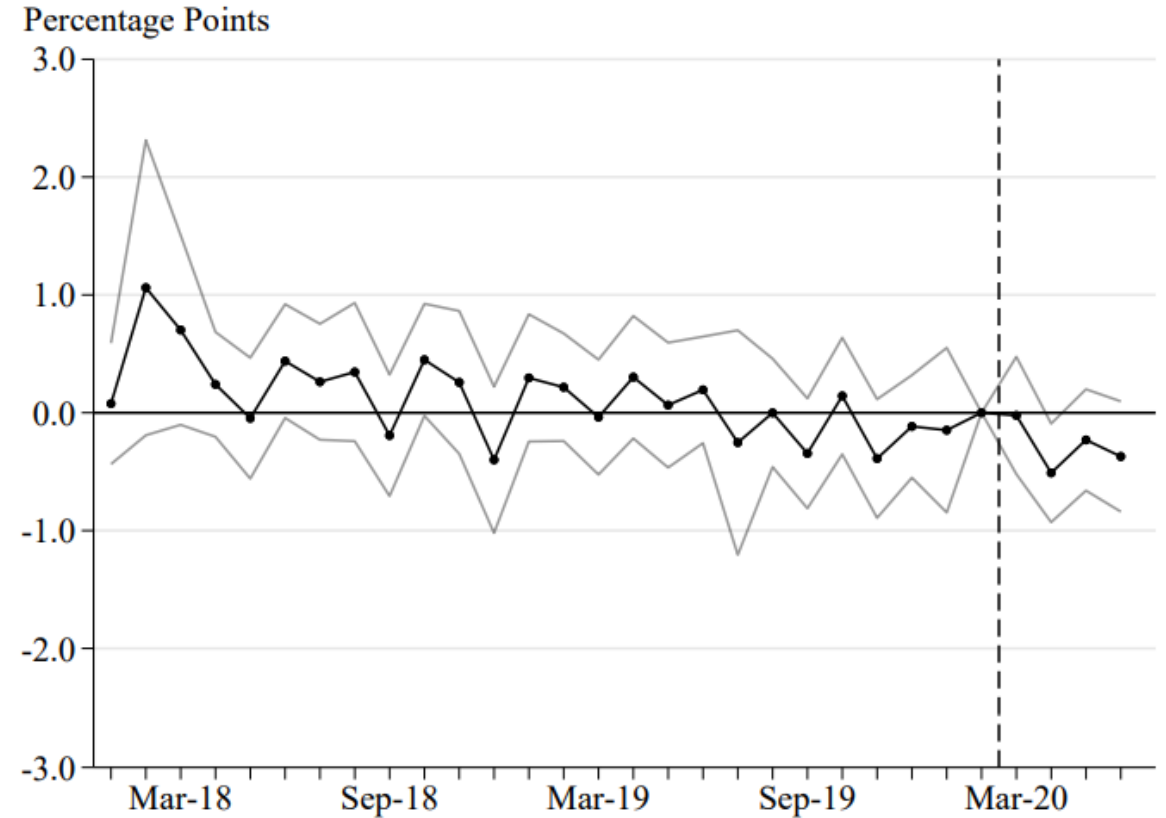
Note: Estimated effects of the scheme on furloughed workers' labor income, conditional on employment.
Source: Own calculations based on register data from Statistics Denmark.

Labor market mobility was basically unaffected

Note: Monthly share of workers that have a job-to-job transition for the treatment and control groups.
Source: Own calculations based on register data from Statistics Denmark.

Note: Estimated effects of the scheme on furloughed workers' probability of having a job-to-job transition.
Source: Own calculations based on register data from Statistics Denmark.