Do bonuses offset the allocative effects of downward rigid base wages?

Online Appendix

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A   Matched data set

We match the Swiss Earnings Structure Survey (SESS) from the Swiss Federal Statistical Office (SFSO, 2020) with Old Age Survivors Insurance (OASI) data from the Central Compensation Office (CCO, 2021). The data is confidential but can be obtained individually from the SFSO (Contact: lse@bfs.admin.ch) and the CCO (Contact: statistique@zas.admin.ch).

To match the two data sets, researchers have to file a data linkage request, comprising a description of the project, the requested data sets, a list of variables, and a strategy for matching the data (see SFSO, 2021). We requested that the data is matched with the OASI social security number, which is available in both data sets.

If the request is approved by all parties, the SFSO sends actual and anonymized social security numbers to the CCO, which then returns the social security data with the anonymized number. The SFSO then provides the SESS data and the OASI data, both comprising the anonymized social security number.

Before submitting the request, it is advisable to contact the the two agencies to discuss the feasibility of the project.

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B Model specification

The full baseline model specification reads:

$$y_{i,t} = \sum_{j \notin 2014} \mathbf{1}\{t = j\} \times \Big[\alpha_j \mathbf{1}\{\Delta w_{i,2014} = 0\} \tag{B.1}$$

$$+ \delta_j \mathbf{1}\{\Delta w_{i,2014} < -0.5\%\} + \gamma_j \mathbf{1}\{\Delta w_{i,2014} > 0\} + \mathbf{X}_{i,2014}\beta_j + \mathbf{Z}_{f,2014}\theta_j\Big]$$

$$+ \theta_i + \varepsilon_{i,t} \,,$$

where $\mathbf{1}\{\Delta w_{i,2014} = 0\}$ corresponds to the wage freeze dummy; $\mathbf{1}\{\Delta w_{i,2014} < -0.5\%\}$ and $\mathbf{1}\{\Delta w_{i,2014} > 0\}$ represent dummy variables for large negative and positive wage changes. $\sum_{j \notin 2014} \mathbf{1}\{t = j\} \times \Big[\delta_j \mathbf{1}\{\Delta w_{i,2014} < -0.5\%\} + \gamma_j \mathbf{1}\{\Delta w_{i,2014} > 0\} + \mathbf{X}_{i,2014}\beta_j + \mathbf{Z}_{f,2014}\theta_j\Big] + \theta_i$ correspond to the control variables mentioned in the main text. ε_{it} is an error term.

The two matrices ($\mathbf{X}_{i,2014}$, $\mathbf{Z}_{f,2014}$) capture observed and unobserved differences that affect selection into treatment at the individual and firm-level. These include dummies for firms, contract type, job type, education, gender, and whether the individual changed employer or was unemployed at some point between 2012 and 2014. θ_i are individual fixed effects, which capture unobserved time-constant characteristics.

In the baseline model α_j measures the average difference between employees with wage freezes and small wage cuts. We then interact the wage freeze dummy with categorical variables related to the compensation scheme:

$$y_{i,t} = \sum_{j \notin 2014} \mathbf{1}\{t = j\} \times \Big[\alpha_j \mathbf{1}\{\Delta w_{i,2014} = 0\} + \mathbf{1}\{\Delta w_{i,2014} = 0\} \times \mathbf{C}_{i,2014}\phi_j \tag{B.2}$$

$$+ \delta_j \mathbf{1}\{\Delta w_{i,2014} < -0.5\%\} + \gamma_j \mathbf{1}\{\Delta w_{i,2014} > 0\} + \mathbf{C}_{i,2014}\eta_j$$

$$+ \mathbf{X}_{i,2014}\beta_j + \mathbf{Z}_{f,2014}\theta_j\Big] + \theta_i + \varepsilon_{i,t} \,,$$

where $\mathbf{C}_{i,2014}$ is a vector of dummy variables that equal one if an individual receives bonus payments (three different size categories), 13th month pay, compensation for overtime, or compensation for Sunday/night work. The base category are employees with no alternative compensation, that is, they are paid 100% in base wage. The coefficient vector ϕ_j measures whether employees with alternative compensation schemes have on average higher or lower outcomes.
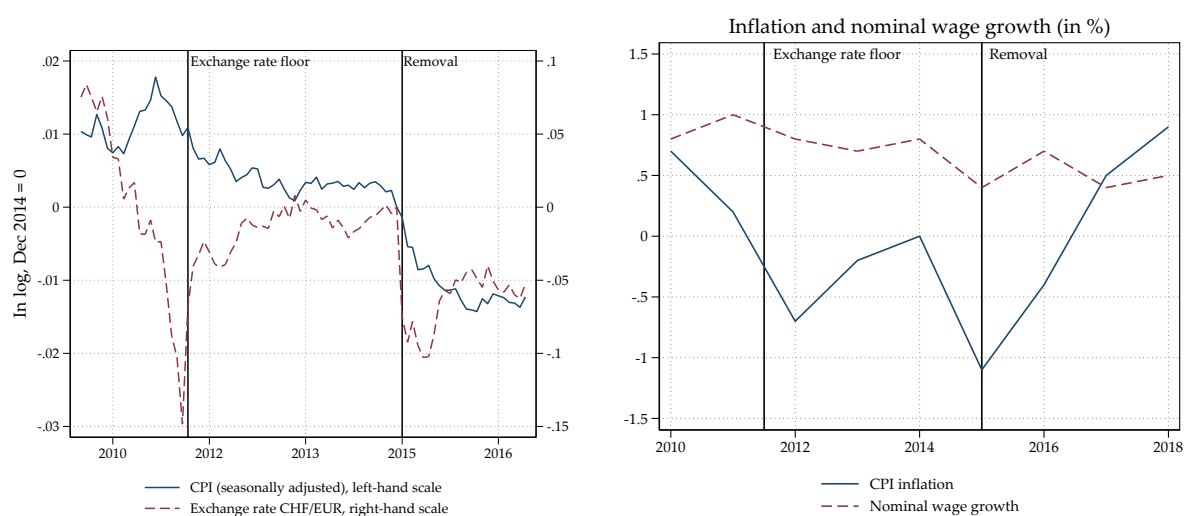
C   Additional results

Figure C.1 — The Swiss franc shock

Notes: Replicated from Funk and Kaufmann (2022).

Table C.1 — Descriptive statistics 2016

	(1) Share zero wage change	(2) Share negative wage change	(3) Share non-zero wage level	(4) Avg. share in total wage	(5) Avg. share in firms' payroll
Base	0.10	0.21	1.00	0.91	0.90
13th month	0.00	0.44	0.77	0.06	0.06
Bonus	0.00	0.69	0.31	0.02	0.03
Overtime	0.00	0.76	0.10	0.00	0.00
Sunday/night	0.04	0.65	0.17	0.01	0.01
Observations	940,209	940,209	1,594,972	1,594,972	36,156

Notes: Descriptive statistics according to compensation component for all employees (job-stayers and job-movers). Weighted using sampling weights from Funk and Kaufmann (2022). (1) Share of zero wage changes between 2014 and 2012; (2) Share of negative wage changes between 2014 and 2012; (3) Share of employees receiving a non-zero payment; (4), (5) Average share in the employee's wage, and firm's payroll, respectively.
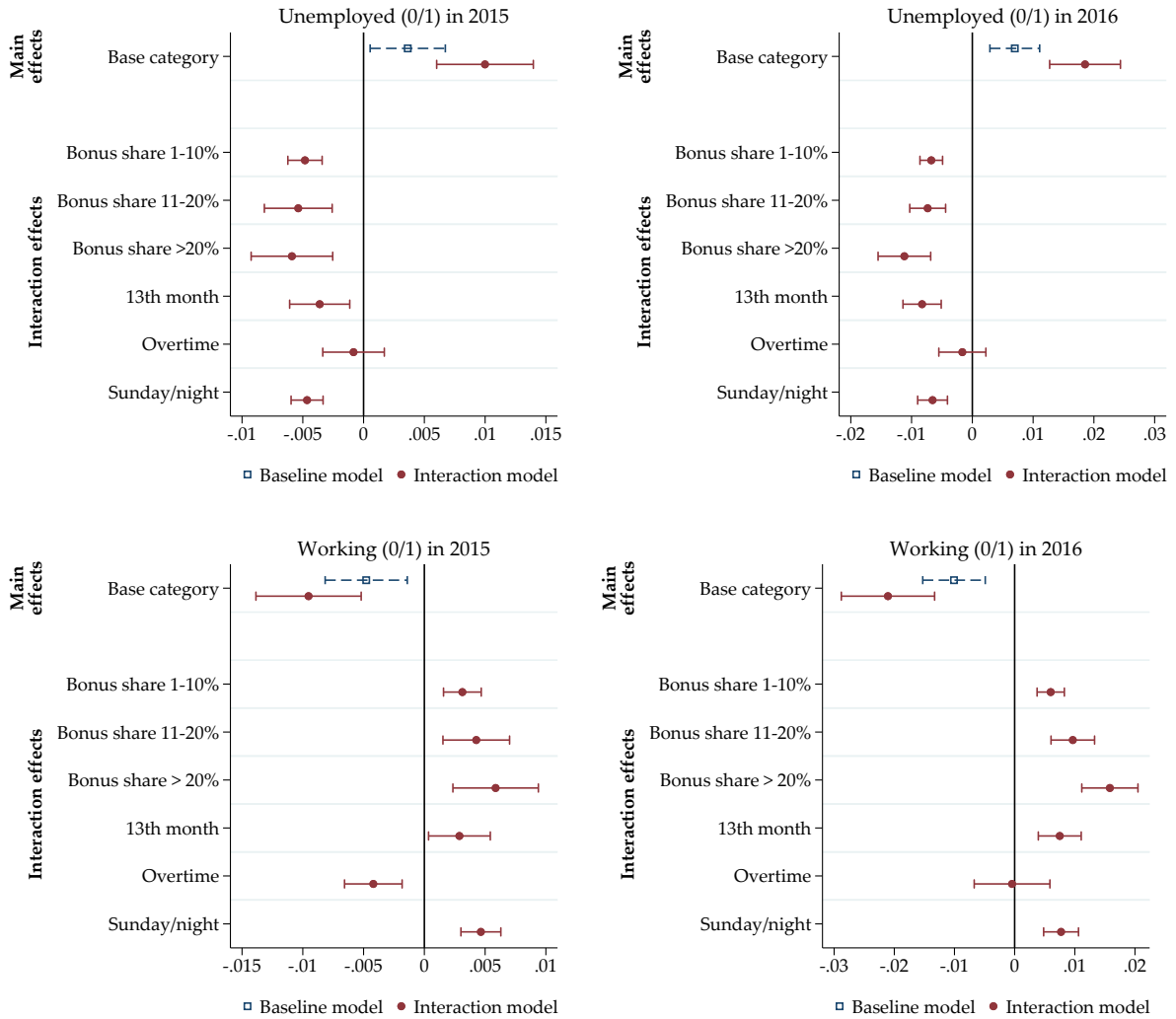
Figure C.2 — Effects on labor market outcomes in 2015 and 2016

Notes: Average difference in the probability of working (employed and self-employed), being unemployed (registered), as well as log income, between employees with wage freezes and small wage cuts in 2014. The first panel gives the effects on the base category (main effects). In the baseline model, this corresponds to all employees with wage freezes (squares, dashed lines). In the interaction model, this corresponds to employees with wage freezes and 100% base wage payments (circles, solid lines). The interaction effects measure the difference to the base category. 95% confidence intervals shown as horizontal lines (standard errors clustered according to unique values in the base wage growth distribution in 2014).

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Figure C.3 — Effects on income in 2015 and 2016

Notes: Average difference in the probability of working (employed and self-employed), being unemployed (registered), as well as log income, between employees with wage freezes and small wage cuts in 2014. The first panel gives the effects on the base category (main effects). In the baseline model, this corresponds to all employees with wage freezes (squares, dashed lines). In the interaction model, this corresponds to employees with wage freezes and 100% base wage payments (circles, solid lines). The interaction effects measure the difference to the base category. 95% confidence intervals shown as horizontal lines (standard errors clustered according to unique values in the base wage growth distribution in 2014).
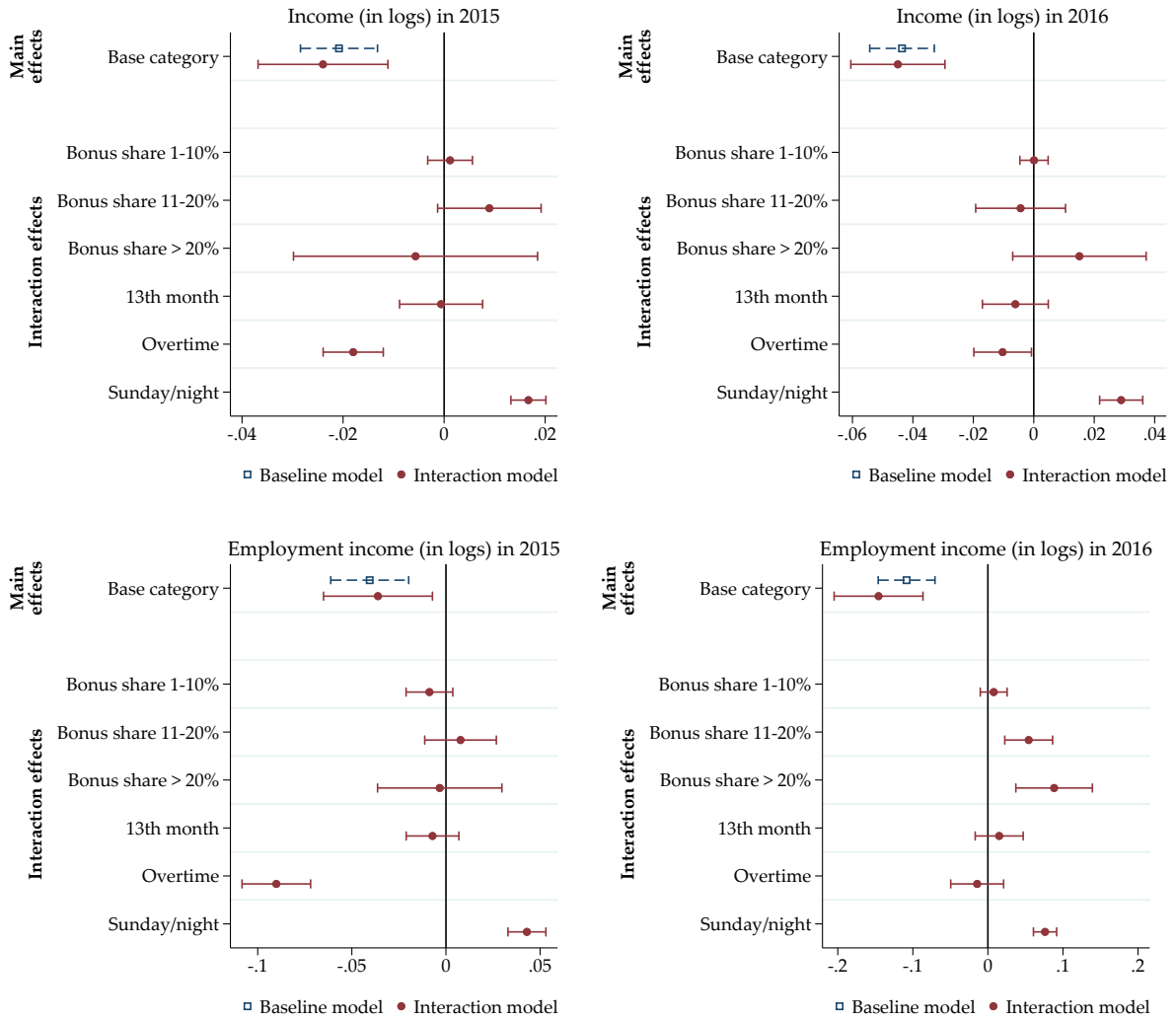
Table C.2 — Baseline coefficient estimates

(a) 2015

	Working (0/1)	Unemployed (0/1)	Income (in log)	Employment income (in log)
Base category in 2015	-0.005***	0.004**	-0.021***	-0.041***
	(0.002)	(0.002)	(0.004)	(0.011)
Controls	yes	yes	yes	yes
Adj. R-sq. (between)	0.31	0.33	0.81	0.42
Adj. R-sq. (within)	0.00	0.00	0.00	0.00
Observations	3,348,132	3,348,172	3,348,172	3,348,172

(b) 2016

	Working (0/1)	Unemployed (0/1)	Income (in log)	Employment income (in log)
Base category in 2016	-0.010***	0.007***	-0.044***	-0.108***
	(0.003)	(0.002)	(0.005)	(0.019)
Controls	yes	yes	yes	yes
Adj. R-sq. (between)	0.31	0.33	0.81	0.42
Adj. R-sq. (within)	0.00	0.00	0.00	0.00
Observations	3,348,132	3,348,172	3,348,172	3,348,172

Notes: The estimates measure the effect on the treatment group (wage freezes in 2014) relative to the control group (small wage cuts in 2014) after a 1% decline of the price level. The estimates are normalized to 0 in the base year 2014. ***/**/* denotes a statistically significant difference at the 1%/5%/10% level based on standard errors clustered according to unique values in the base wage growth distribution in 2014.

Table C.3 — Interaction coefficient estimates

(a) 2015

	Working (0/1)	Unemployed (0/1)	Income (in log)	Employment income (in log)
Base category in 2015	-0.010***	0.010***	-0.024***	-0.036**
	(0.002)	(0.002)	(0.007)	(0.015)
2015 × Bonus share 1-10%	0.003***	-0.005***	0.001	-0.009
	(0.001)	(0.001)	(0.002)	(0.006)
2015 × Bonus share 11-20%	0.004***	-0.005***	0.009*	0.008
	(0.001)	(0.001)	(0.005)	(0.010)
2015 × Bonus share > 20%	0.006***	-0.006***	-0.006	-0.003
	(0.002)	(0.002)	(0.012)	(0.017)
2015 × 13th month	0.003**	-0.004***	-0.001	-0.007
	(0.001)	(0.001)	(0.004)	(0.007)
2015 × Overtime	-0.004***	-0.001	-0.018***	-0.090***
	(0.001)	(0.001)	(0.003)	(0.009)
2015 × Sunday/night	0.005***	-0.005***	0.017***	0.043***
	(0.001)	(0.001)	(0.002)	(0.005)
Controls	yes	yes	yes	yes
Adj. R-sq. (between)	0.31	0.33	0.81	0.42
Adj. R-sq. (within)	0.00	0.00	0.00	0.00
Observations	3,348,132	3,348,172	3,348,172	3,348,172

(b) 2016

	Working (0/1)	Unemployed (0/1)	Income (in log)	Employment income (in log))
Base category in 2016	-0.021***	0.019***	-0.045***	-0.146***
	(0.004)	(0.003)	(0.008)	(0.030)
2016 × Bonus share 1-10%	0.006***	-0.007***	0.000	0.008
	(0.001)	(0.001)	(0.002)	(0.009)
2016 × Bonus share 11-20%	0.010***	-0.007***	-0.004	0.054***
	(0.002)	(0.002)	(0.008)	(0.016)
2016 × Bonus share > 20%	0.016***	-0.011***	0.015	0.088***
	(0.002)	(0.002)	(0.011)	(0.026)
2016 × 13th month	0.008***	-0.008***	-0.006	0.015
	(0.002)	(0.002)	(0.006)	(0.016)
2016 × Overtime	-0.000	-0.002	-0.010**	-0.014
	(0.003)	(0.002)	(0.005)	(0.018)
2016 × Sunday/night	0.008***	-0.007***	0.029***	0.076***
	(0.001)	(0.001)	(0.004)	(0.008)
Controls	yes	yes	yes	yes
Adj. R-sq. (between)	0.31	0.33	0.81	0.42
Adj. R-sq. (within)	0.00	0.00	0.00	0.00
Observations	3,348,132	3,348,172	3,348,172	3,348,172

Notes: The estimates measure the effect on the treatment group (wage freezes in 2014) relative to the control group (small wage cuts in 2014) after a 1% decline of the price level. The estimates are normalized to 0 in the base year 2014. ***/**/* denotes a statistically significant difference at the 1%/5%/10% level based on standard errors clustered according to unique values in the base wage growth distribution in 2014.

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