Replication instructions for "The Health Effects of Downsizing Survival"

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I. Data availability

This paper uses individual-level administrative data from the *Austrian Social Security Database* (ASSD, Zweimüller et al. 2009), supplied by the *Bundesministerium für Arbeit, Soziales und Konsumentenschutz*, and healthcare claims from the *Österreichische Gesundheitskasse* (UASF). Because of their proprietary and sensitive nature, and to protect patient confidentiality, we are not allowed to make these data publicly available. However, interested researchers can gain access to a subset of the ASSD data, which is sufficient for replication, from https://arbeitsmarktdatenbank.at. The application must contain an appropriate data security concept and a statement of the research purpose. Under the same provisions, requests for access to the health data can be directed to *Österreichische Gesundheitskasse, Wienerbergstraße 15-19, 1100 Wien, Austria,* office@oegk.at.

II. Extracting and preparing the raw data

We access the raw data via a SGI UV 3000 computing cluster running SUSE Linux Enterprise Server 11. The cluster has 1,728 processor cores and 20 TB global shared memory distributed among 72 blades, where each blade holds two 12-core Intel Xeon E5-4650V3 processors. We performed the data preparation on a 512GB RAM 64 CPU blade using Stata/MP 14.1. The approximate total run time is 10 days. Please follow these steps:

1. Extract all files from `getdat.tar` in a directory on a machine that can access the raw data. Change the current directory to this folder.

2. In the `A00.0_master.do`, change the following global macros to the directories that contain the respective raw data sets listed in section III:

`dir_HV`	Employer-employee panel, firm data, wage data, coinsured dependents data
`dir_REP`	Cross-sectional ASSD extracts
`dir_GKK`	UASF data
`dir_LZ`	Pay slip data
`dir_ML`	Mass layoffs data
`dir_AUV`	Work accident data
`dir_AMS`	UI claim data

3. We use some user-written Stata packages which need to be installed first, in case you have not done so already. Please execute the following commands in the Stata console:

   ```
   ssc install gzsave
   ssc install fre
   ssc install mdesc
   ssc install carryforward
   ```

4. Below is a list with all raw data sets necessary for replication. We use the following color coding for data sets:

red	These are proprietary raw data sets
green	These are raw data sets that are delivered with this replication package[1]
blue	These are the final data sets

5. Execute the master do-file.

The master do-file calls the following routines and saves all relevant data sets we use for our analyses in a directory called `data/export/`:

[1] We attach two datasets that we collected by hand: `bridgedays.dta`, which is a list of all bridge days between 1998 and 2015 in Upper Austria, and `bridgedays_per_quarter.dta`, which counts the number of bridge days per quarter between 1998 and 2015 in Upper Austria. We did not actually end up using the bridge day information for our analyses, but these data sets are necessary for the do-files to execute without error.

Do-file	Input data	Main output data	Produces
	Preparing the health outcome data		
H01.1_mainhealthout	fakten.dta d_lstg.dta d_diag.dta d_vers.dta data/individual/bridgedays.dta	data/individual/ml_prod_healthdta.dta	Health outcomes 1
H01.2_healthpanel	fakten.dta d_lstg.dta d_vers.dta	data/individual/health_panel_q_wide.dta data/export/health_panel_q_wide.dta	Health outcomes 2
H01.3_moremeds	fakten.dta d_lstg.dta d_diag.dta d_vers.dta	data/individual/moremeds_q.dta.dta	Health outcomes 3
H01.4_heartout	fakten.dta d_lstg.dta d_diag.dta d_vers.dta	data/individual/heartout_q.dta.dta	Health outcomes 4
	Preparing the mass layoff data		
J01.1_maindat	extra_panel.dta massenentlassungen_penr_benr.dta ml_firmenebene.dta data/individual/ml_prod_healthdta.dta data/individual/bridgedays_per_quarter.dta firmen_nace3.dta firmen_nace3_lau1.dta arbeitslosenrate_lau1_quarter.dta firmen.dta firmen_firmsize.dta ml_firmsize.dta data/individual/heartout_q.dta.dta data/individual/moremeds_q.dta.dta data/individual/health_panel_q_wide.dta	data/export/valid_sample_4.dta	Main estimation data set

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Do-file	Input data	Main output data	Produces
J01.2_maindat_4P	extra_panel.dta massenentlassungen_penr_benr.dta ml_firmenebene.dta data/individual/ml_prod_healthdta.dta data/individual/bridgedays_per_quarter.dta firmen_nace3.dta firmen_nace3_lau1.dta arbeitslosenrate_lau1_quarter.dta firmen.dta firmen_firmsize.dta ml_firmsize.dta data/individual/heartout_q.dta.dta data/individual/moremeds_q.dta.dta data/individual/health_panel_q_wide.dta	data/export/valid_sample_4P.dta	4-period pre-/post-ML data set
J01.2_maindat_5P	extra_panel.dta massenentlassungen_penr_benr.dta ml_firmenebene.dta data/individual/ml_prod_healthdta.dta data/individual/bridgedays_per_quarter.dta firmen_nace3.dta firmen_nace3_lau1.dta arbeitslosenrate_lau1_quarter.dta firmen.dta firmen_firmsize.dta ml_firmsize.dta data/individual/heartout_q.dta.dta data/individual/moremeds_q.dta.dta data/individual/health_panel_q_wide.dta	data/export/valid_sample_5P.dta	5-period pre-/post-ML data set

Continued on the next page . . .

Do-file	Input data	Main output data	Produces
J01.2_maindat_8P	extra_panel.dta massenentlassungen_penr_benr.dta ml_firmenebene.dta data/individual/ml_prod_healthdta.dta data/individual/bridgedays_per_quarter.dta firmen_nace3.dta firmen_nace3_lau1.dta arbeitslosenrate_lau1_quarter.dta firmen.dta firmen_firmsize.dta ml_firmsize.dta data/individual/heartout_q.dta.dta data/individual/moremeds_q.dta.dta data/individual/health_panel_q_wide.dta	data/export/valid_sample_5EXT.dta	8-period pre-/post-ML data set
J01.3_earlyleavers	Intermediary data sets generated by J01.1_maindat.do data/individual/ml_prod_healthdta.dta data/individual/bridgedays_per_quarter.dta massenentlassungen_penr_benr.dta ml_firmenebene.dta data/individual/heartout_q.dta.dta data/individual/moremeds_q.dta.dta data/individual/health_panel_q_wide.dta data/export/valid_sample_4.dta	data/export/orig_and_early_sample_5INC.dta	ML victim sample
J01.4_noML	firmen.dta firmen_firmsize.dta tenure_$y_$q.dta exp_$y_$q.dta penr_svnr.dta qf_$y_$q.dta stammdaten_uniqe.dta data/export/valid_sample_4.dta	data/export/C1_valid_sample_5.dta.gz	Alternative control group sample
Preparing additional data sets			
Z01.1_outstress	fakten.dta d_lstg.dta d_diag.dta d_vers.dta	data/export/out_stress.dta	More health outcomes

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Do-file	Input data	Main output data	Produces
Z01.2_wages	data/export/valid_sample_4.dta beitragsgrundlagen.dta	data/export/dailywages.dta data/export/wagematch.dta	Wage data
Z01.3_emplength	data/export/orig_and_early_sample_5INC.dta qf_$y_$q.dta	data/export/employment_length.dta	Post-ML employment data
Z01.4_mechs	dg.dta firmsize_$y_$q.dta qu.dta beitragsgrundlagen.dta stammdaten_uniqe.dta ml_firmenebene.dta	data/export/mechs_firingthreat_penr_benr_fired.dta data/export/mechs_mls_firing.dta	Firing risk data sets
Z01.5_cancer	fakten.dta d_lstg.dta d_diag.dta d_vers.dta	data/export/cancer_i.dta	Cancer outcomes
Z01.6_injuries	schadenssaetze.dta schaden_all.dta penr_svnr.dta fakten.dta d_diag.dta d_vers.dta	data/export/injuries_auva.dta data/export/injuries.dta	Injuries and accidents
Z01.7_hospstays	fakten.dta d_lstg.dta d_diag.dta d_vers.dta	data/export/hospstays.dta	Inpatient stays
Z01.8_marrwages	mitversicherte.dta lz_all_oldnew.dta beitragsgrundlagen.dta	data/export/partnerwages.dta	Spousal wages
Z01.9_firstbirths	qu.dta mitversicherte.dta	data/export/firstbirths.dta	Date of first birth for parents
Z01.10_shift	lz_all_oldnew.dta	data/export/shiftworkers.dta	Data on shift work indicator
Z01.11_stw	FDG.dta	data/export/stw.dta	Short-time work spells

III. The proprietary raw data sets

III.1. UASF data

fakten.dta

(Medical claim data)

Variable	Description
ltim_key	Date of claim
atim_key	Billing date
vers_key	Patient key
lvp_key	Prescribing entity key (e.g., physician, hospital)
avp_key	Billing entity key (e.g., pharmacy)
lstg_key	Type of claim key
diag_key	Diagnosis key
anzahl	Count (number of drug packages, hospital days, etc.)
betrag	Euro amount billed to the insurance

d_lstg.dta

(More information on claims and drug ATC codes)

Variable	Description
lstg_key	Type of claim key
lstgart	Type of claim (e.g., hospital stay, drug prescription, etc.)
indi	ATC code for drugs
posbez	Claim string
grpbez	Category of claim string

d_diag.dta

(More information on diagnoses and ICD codes)

Variable	Description
diag_key	Diagnosis key
diag	ICD-9 and ICD-10 diagnosis code

d_vers.dta

(More information on patients)

Variable	Description
vers_key	Patient key
penr_p	Patient ID (used for match with other registers)
titel	Academic title
sex	Gender
staat	Country of birth
polz	Zip code
bezirk	County
toddat	Date of death
gebmon	Month of birth

III.2. ASSD data

stammdaten_uniqe.dta

(Demographic information on workers)

Variable	Description
penr	Worker ID
svnr	Old worker ID
frau	Female dummy

birthyear	Year of birth
birthmonth	Month of birth
akgr	Academic title
stsl	Country of birth
deathday	Day of death
deathmonth	Month of death
deathyear	Year of death

beitragsgrundlagen.dta

(Wage information)

Variable	Description
penr	Worker ID
benr	Firm ID
year	Year
bg_einkommen	Annual wage (up to tax cap)
bg_tagessatz	Daily wage (up to tax cap)

qu.dta

(Labor market spells)

Variable	Description
penr	Worker ID
benr	Firm ID
qu_vdat	Spell start date
qu_bdat	Spell end date
qu_qual	Type of spell
qu_cat	Category of spell (employed, retired, etc.)
qu_subcat	Subcategory of spell
qu_class	Worker occupation (blue/white collar)
qu_type	Class of spell (regular, apprentice, etc.)

dg.dta

(Firm information, spell data)

Variable	Description
benr	Firm ID
formation	Year of formation
gueltig_von	Spell start date
gueltig_bis	Spell end date
nace08	NACE08 industry code
nace08_1	NACE08 first digit
nace08_2	NACE08 first two digits
nace08_3	NACE08 first three digits
sektor08	NACE08 sector code
nace95	NACE95 industry code
nace95_1	NACE95 first digit
nace95_2	NACE95 first two digits
nace95_3	NACE95 first three digits
sektor95	NACE95 sector code
bundesland	Federal state
plz	Zip code
gkz	Municipality code
nuts	NUTS code

mitversicherte.dta

(Information on coinsured dependents, spell data)

Variable	Description

penr_hv	ID of main insurant
penr	ID of coinsured person
code	Type of dependence (spouse, child, etc.)
gueltig_von	Spell start date
gueltig_bis	Spell end date

penr_svnr.dta

(Match between different worker IDs, necessary to merge certain data sets that only have the old worker ID)

Variable	Description
penr	New worker ID
svnr	Old worker ID

qf_$y_$q.dta

(Quarterly cross sections of all workers, saved in separate data sets, insert the year in $y and the quarter in $q.dta)

Variable	Description
svnr	Old worker ID
benr	Firm ID
qual	Type of spell
vdat	Spell start date
bdat	Spell end date
penr	Worker ID
cat	Category of spell (employed, retired, etc.)
subcat	Subcategory of spell
class	Worker occupation (blue collar/white collar)
type	Class of spell (regular, apprentice, etc.)
datum	Date of cross section
age	Age in years
wage	Wage (up to tax cap)
wage_miss	Missing wage indicator

tenure_$y_$q.dta

(Quarterly cross sections containing worker tenure, saved in separate data sets, insert the year in $y and the quarter in $q.dta)

Variable	Description
svnr	Old worker ID
benr	Firm ID
datum	Date of cross section
dur_gap	Gap days
dur_ten	Tenure duration in days

exp_$y_$q.dta

(Quarterly cross sections containing worker experience, saved in separate data sets, insert the year in $y and the quarter in $q.dta)

Variable	Description
svnr	Old worker ID
Mexp	Net experience (days worked, not counting gaps in employment)
Bexp	Total experience
datum	Date of cross section

firmsize_$y_$q.dta

(Quarterly cross sections containing firm sizes, saved in separate data sets, insert the year in $y and the quarter in $q.dta)

Variable	Description
benr	Firm ID
firmsize	Firm size (number of workers)
datum	Date of cross section

nace95	NACE95 industry code

massenentlassungen_penr_benr.dta

(Mass layoffs, affected workers for each mass layoff)

Variable	Description
penr	Worker ID
benr	Firm ID
entlassen	Dummy for whether worker was laid off
aj_begin_date	Old job: begin date
aj_end_date	Old job: end date
aj_type	Old job: type of job
aj_duration	Old job: duration in days
ml_type	Mass layoff category according to UI office
ml_datum	Mass layoff date
ml_prev_firms e	Firm size prior to mass layoff
ml_event	Date when mass layoff completed
ml_amount	Number of laid-off workers
nj_benr	Next job: firm ID
nj_begin_date	Next job: begin date
nj_end_date	Next job: end date
nj_type	Next job: type of job
nj_duration	Next job: duration in days
unempl_begin_date	Begin date next unemployment spell
unempl_end_date	End date next unemployment spell
unempl_type	Type of next unemployment spell
unempl_duration	Duration of next unemployment spell
ret_type	Retirement type
ret_begin_date	Retirement date
retirement	Indicator for whether person retires within 90 days of mass layoff
joint_mover	Indicator for joint movers
recalled	Indicator for recalled workers

extra_panel.dta

(Mass layoff worker panel)

Variable	Description
penr	Worker ID
benr	Firm ID
aj_begin_date	Old job: begin date
aj_end_date	Old job: end date
year	Year
quartal	Quarter
pe_gebdat	Worker birth date
pe_age	Worker age in years
pe_female	Worker gender
qu_bc_wc	Worker occupation (blue/white collar)
qu_experience	Worker experience in days
qu_tenure	Worker tenure in days
pe_educ	Worker education
pe_educ_imp	Worker imputed education
pe_migrant	Worker migatory status
pe_union	Worker union membership

ml_firmenebene.dta

(Mass layoff firm information)

Variable	Description
benr	Firm ID
ml_datum	Mass layoff date

ml_event	Date when mass layoff completed
ml_amount	Number of laid-off workers
rel_amount	Number of laid-off workers / firmsize
ml_prev_firmsize	Firm size before mass layoff
ml_next_firmsize	Firm size after mass layoff
ml_type	Mass layoff category according to UI office
plant_closure	Plant closure category
ml_new_empl	Incoming employees during mass layoff
ml_leave_empl	Outgoing employees during mass layoff
ml_prev_firmsize_bcwc	Firm size before mass layoff, only regular employees
ml_next_firmsize_bcwc	Firm size after mass layoff, only regular employees

ml_firmsize.dta

(Firm sizes of mass layoff firms over time)

Variable	Description
benr	Firm ID
datum	Date
firmsize_all	Firm size: all workers
firmsize_bcwc	Firm size: regular employees

firmen.dta

(Within-firm workforce composition I)

Variable	Description
benr	Firm ID
date	Date
year	Year
quarter	Quarter
nace3	NACE08 3-digit code
nace4	NACE08 4-digit code
lau1	LAU1 code
fi_formation	Year of formation
fi_age	Firm age
fi_union	Union density in firm
fi_masslayoff_yes	Mass layoff indicator
fi_masslayoff_type1	Mass layoff type 1 indicator (small ML)
fi_masslayoff_type2	Mass layoff type 2 indicator (medium ML)
fi_masslayoff_type3	Mass layoff type 3 indicator (large ML)
fi_educ_yes	Indicator for whether educational information is available
fi_educ_UN	Share of workers with university degree
fi_educ_HS	Share of workers with high school degree
fi_educ_LE	Share of workers with apprenticeship training
fi_educ_PS	Share of workers with compulsory schooling
fi_wage_yes	Indicator for whether wage information is available
fi_ywage_mean	Mean yearly wage
fi_ywage_median	Median yearly wage
fi_ywage_sd	Standard deviation of yearly wage
fi_dwage_mean	Mean daily wage
fi_dwage_median	Median daily wage
fi_dwage_sd	Standard deviation of daily wage
fi_tenure_yes	Indicator for whether tenure information is available
fi_tenure_1u	Share of workers with less than 1 year of tenure
fi_tenure_1o	Share of workers with more than 1 year of tenure
fi_tenure_5u	Share of workers with less than 5 years of tenure
fi_tenure_5o	Share of workers with more than 5 years of tenure
fi_turnover_yes	Indicator for whether turnover information is available
fi_vj_exit	Compared to previous year: Share of outgoing workers
fi_vj_exit_m	~ Share of outgoing male workers
fi_vj_exit_f	~ Share of outgoing female workers
fi_vj_exit_age_25	~ Share of outgoing workers under the age of 25

fi_vj_exit_age_25_50	~ Share of outgoing workers between 25 and 50
fi_vj_exit_age_50	~ Share of outgoing workers over the age of 50
fi_vj_exit_m_age_25	~ Share of outgoing male workers under the age of 25
fi_vj_exit_m_age_25_50	~ Share of outgoing male workers between 25 and 50
fi_vj_exit_m_age_50	~ Share of outgoing male workers over the age of 50
fi_vj_exit_f_age_25	~ Share of outgoing female workers under the age of 25
fi_vj_exit_f_age_25_50	~ Share of outgoing female workers between 25 and 50
fi_vj_exit_f_age_50	~ Share of outgoing female workers over the age of 50
fi_vj_entr	~ Share of incoming workers
fi_vj_entr_m	~ Share of incoming male workers
fi_vj_entr_f	~ Share of incoming female workers
fi_vj_entr_age_25	~ Share of incoming workers under the age of 25
fi_vj_entr_age_25_50	~ Share of incoming workers between 25 and 50
fi_vj_entr_age_50	~ Share of incoming workers over the age of 50
fi_vj_entr_m_age_25	~ Share of incoming male workers under the age of 25
fi_vj_entr_m_age_25_50	~ Share of incoming male workers between 25 and 50
fi_vj_entr_m_age_50	~ Share of incoming male workers over the age of 50
fi_vj_entr_f_age_25	~ Share of incoming female workers under the age of 25
fi_vj_entr_f_age_25_50	~ Share of incoming female workers between 25 and 50
fi_vj_entr_f_age_50	~ Share of incoming female workers over the age of 50
fi_vq_exit	Compared to previous quarter: Share of outgoing workers
fi_vq_exit_m	~ Share of outgoing male workers
fi_vq_exit_f	~ Share of outgoing female workers
fi_vq_exit_age_25	~ Share of outgoing workers under the age of 25
fi_vq_exit_age_25_50	~ Share of outgoing workers between 25 and 50
fi_vq_exit_age_50	~ Share of outgoing workers over the age of 50
fi_vq_exit_m_age_25	~ Share of outgoing male workers under the age of 25
fi_vq_exit_m_age_25_50	~ Share of outgoing male workers between 25 and 50
fi_vq_exit_m_age_50	~ Share of outgoing male workers over the age of 50
fi_vq_exit_f_age_25	~ Share of outgoing female workers under the age of 25
fi_vq_exit_f_age_25_50	~ Share of outgoing female workers between 25 and 50
fi_vq_exit_f_age_50	~ Share of outgoing female workers over the age of 50
fi_vq_entr	~ Share of incoming workers
fi_vq_entr_m	~ Share of incoming male workers
fi_vq_entr_f	~ Share of incoming female workers
fi_vq_entr_age_25	~ Share of incoming workers under the age of 25
fi_vq_entr_age_25_50	~ Share of incoming workers between 25 and 50
fi_vq_entr_age_50	~ Share of incoming workers over the age of 50
fi_vq_entr_m_age_25	~ Share of incoming male workers under the age of 25
fi_vq_entr_m_age_25_50	~ Share of incoming male workers between 25 and 50
fi_vq_entr_m_age_50	~ Share of incoming male workers over the age of 50
fi_vq_entr_f_age_25	~ Share of incoming female workers under the age of 25
fi_vq_entr_f_age_25_50	~ Share of incoming female workers between 25 and 50
fi_vq_entr_f_age_50	~ Share of incoming female workers over the age of 50

firmen_firmsize.dta

(Within-firm workforce composition II)

Variable	Description
benr	Firm ID
date	Date
year	Year
quarter	Quarter
nace3	NACE08 3-digit code
nace4	NACE08 4-digit code
lau1	LAU1 code
bundesland	Federal state
plz	Zip code
gkz	Municipality code
bstsl	Country
formation	Year of formation
nace95	NACE95 industry code

nace95_1	NACE95 first digit
nace95_2	NACE95 first two digits
nace95_3	NACE95 first three digits
sektor95	NACE95 sector
firmsize	Firm size
firmsize_min2	Firm size 2 quarters ago
firmsize_min1	Firm size 1 quarter ago
firmsize_pl1	Firm size next quarter
firmsize_pl2	Firm size next 2 quarters
frauen	Number of female workers
maenner	Number of male workers
age15_24	Number of workers between age 15 and 24
age15_24_m	Number of male workers between age 15 and 24
age15_24_f	Number of female workers between age 15 and 24
age25_54	Number of workers between age 25 and 54
age25_54_m	Number of male workers between age 25 and 54
age25_54_f	Number of female workers between age 25 and 54
age55pl	Number of workers aged 55 or older
age55pl_m	Number of male workers aged 55 or older
age55pl_f	Number of female workers aged 55 or older
mean_age	Mean age
mean_age_f	Mean age female workers
mean_age_m	Mean age male workers
blue_collar_f	Number of female blue-collar workers
blue_collar_m	Number of male blue-collar workers
white_collar_f	Number of female white-collar workers
white_collar_m	Number of male white-collar workers
civil_servant_f	Number of female civil servants
civil_servant_m	Number of male civil servants
apprenticeship_f	Number of female apprentices
apprenticeship_m	Number of male apprentices
marginal_f	Number of female marginal workers
marginal_m	Number of male marginal workers
werkvertrag_f	Number of female contractors
werkvertrag_m	Number of male contractors
inlaender	Number of Austrians
inlaender_f	Number of female Austrians
inlaender_m	Number of male Austrians
auslaender	Number of non-Austrians
auslaender_m	Number of male non-Austrians
auslaender_f	Number of female non-Austrians
anz_wage	Number of positive wage earners
sum_wage	Sum of daily wages
mean_wage	Mean wage
mean_wage_f	Mean wage for female workers
mean_wage_m	Mean wage for male workers
med_wage	Median wage
med_wage_f	Median wage for female workers
med_wage_m	Mean wage for male workers
sd_wage	Standard deviation of wages
sd_wage_f	Standard deviation of wages for female workers
sd_wage_m	Standard deviation of wages for male workers
avg_wage	Average wage of positive wage earners
sum_bg	Sum of daily wages including bonus payments
sum_sz	Sum of bonus payments
zusatz_zeitstempel	Date of import from ASSD

firmen_nace3.dta

(Industry sector information)

Variable	Description
nace3	NACE08 3-digit code

date	Date
year	Year
quarter	Quarter
n3_anzahl	Number of firms in the industry
n3_neue	Number of incoming firms in the industry

firmen_nace3_lau1.dta

(Industry sector information at the LAU1 county level)

Variable	Description
nace3	NACE08 3-digit code
lau1	LAU1 code
date	Date
year	Year
quarter	Quarter
nb_anzahl	Number of firms in the industry and county
nb_neue	Number of incoming firms in the industry and county

arbeitslosenrate_lau1_quarter.dta

(Unemployment rate by LAU1 county and quarter)

Variable	Description
year	Year
quarter	Quarter
lau1_code	LAU1 code
al_rate	Unemployment rate
al_rate_m	Male unemployment rate
al_rate_f	Female unemployment rate
al_rate_b	Blue-collar worker unemployment rate
al_rate_w	White-collar worker unemployment rate
al_rate_y	Unemployment rate under age 25
al_rate_p	Unemployment rate between age 25 and 45
al_rate_o	Unemployment rate over age 45
al_rate_b_m	Male blue-collar worker unemployment rate
al_rate_w_m	Male white-collar worker unemployment rate
al_rate_b_f	Female blue-collar worker unemployment rate
al_rate_w_f	Female white-collar worker unemployment rate
al_rate_b_y	Blue-collar worker unemployment rate under age 25
al_rate_b_p	Blue-collar worker unemployment rate between age 25 and 45
al_rate_b_o	Blue-collar worker unemployment rate over age 45
al_rate_w_y	White-collar worker unemployment rate under age 25
al_rate_w_p	White-collar worker unemployment rate between age 25 and 45
al_rate_w_o	White-collar worker unemployment rate over age 45
al_rate_m_y	Male unemployment rate under age 25
al_rate_m_p	Male unemployment rate between age 25 and 45
al_rate_m_o	Male unemployment rate over age 45
al_rate_f_y	Female unemployment rate under age 25
al_rate_f_p	Female unemployment rate between age 25 and 45
al_rate_f_o	Female unemployment rate over age 45
al_rate_b_m_y	Male blue-collar worker unemployment rate under age 25
al_rate_b_m_p	Male blue-collar worker unemployment rate between age 25 and 45
al_rate_b_m_o	Male blue-collar worker unemployment rate over age 45
al_rate_b_f_y	Female blue-collar worker unemployment rate under age 25
al_rate_b_f_p	Female blue-collar worker unemployment rate between age 25 and 45
al_rate_b_f_o	Female blue-collar worker unemployment rate over age 45
al_rate_w_m_y	Male white-collar worker unemployment rate under age 25
al_rate_w_m_p	Male white-collar worker unemployment rate between age 25 and 45
al_rate_w_m_o	Male white-collar worker unemployment rate over age 45
al_rate_w_f_y	Female white-collar worker unemployment rate under age 25
al_rate_w_f_p	Female white-collar worker unemployment rate between age 25 and 45
al_rate_w_f_o	Female white-collar worker unemployment rate over age 45

`schaden_all.dta`

(Work accident data, 2009 data delivery)

Variable	Description
`svnr`	Old worker ID
`berufskrankheit`	Indicator for whether entry is occupational disease or work accident
`unf_date`	Date of accident

`schadenssaetze.dta`

(Work accident data, 2018 data delivery)

Variable	Description
`penr`	worker ID
`kz_ubk`	Indicator for whether entry is occupational disease or work accident
`unftag`	Date of accident

`lz_all_oldnew.dta`

(Pay slip data)

Variable	Description
`penr`	Worker ID
`jahr`	Year
`penrpart`	Spouse ID
`plz`	Zip code
`bez_brutto`	Gross earnings
`bez_strfrei`	Tax-exempt earnings
`bez_sonst`	Other earnings

`FDG.dta`

(UI office service data)

Variable	Description
`penr`	Worker ID
`gsnr`	UI office ID
`fdg_vdat`	Start date of service
`fdg_bdat`	End date of service
`fdg_art`	Type of service code
`fdg_art_str`	Type of service string

III.3. Hand-collected data

`bridgedays.dta`

(List of bridge days between 1998 and 2015)

Variable	Description
`bridgeday`	Date of bridge day

`bridgedays_per_quarter.dta`

(Bridge days per calendar quarter between 1998 and 2015)

Variable	Description
`yq`	Quarter
`numb_bridgedays`	Number of bridge days

IV. Creating the tables and graphs

The final analyses can be performed locally using Stata 16.1 or higher on a computer that runs Windows 10 or higher. The approximate run time is 1.5 days. Please follow these steps:

1. Place all do-files from `analyses.tar` in a folder on your computer and change the current directory to this folder.

2. Copy all data sets from `data/export/` to a directory called `data/import/` in your current directory.[2] The `data/import/` folder should contain the following data sets:

   ```
   C1_valid_sample_5.dta.gz
   cancer_i.dta
   dailywages.dta
   employment_length.dta
   firstbirths.dta
   health_panel_q_wide.dta
   hospstays.dta
   injuries.dta
   injuries_auva.dta
   mechs_firingthreat_penr_benr_fired.dta
   mechs_mls_firing.dta
   orig_and_early_sample_5INC.dta
   out_stress.dta
   partnerwages.dta
   shiftworkers.dta
   stw.dta
   valid_sample_4.dta
   valid_sample_4P.dta
   valid_sample_5EXT.dta
   valid_sample_5P.dta
   wagematch.dta
   ```

3. The master do-file `00.0_master.do` automatically generates a folder structure where outputs are saved.

4. We use some user-written Stata packages that have to be installed first, in case you have not done so already. Please execute the following commands in the Stata console:

   ```
   ssc install parmest
   ssc install gzsave
   ssc install fre
   net install grc1leg, from("http://www.stata.com/users/vwiggins/")
   ssc install entropy
   ssc install blindschemes
   ssc install estout
   ssc install carryforward
   ```

5. Execute the master do-file.

The master do-file calls the following routines:

[2] This step is necessary because we performed the data preparation and the final analyses on different machines. If you want to execute all do-files on a single machine, simply copy the folder `data/export/` and change its name to `data/import/` before you execute the master do-file in `analyses.tar`.

Do-file	Input data	Main output data	Produces
01.1_prepare_estdat	data/import/valid_sample_4.dta data/import/out_stress.dta data/import/wagematch.dta	data/estdat.dta	Final estimation sample
01.2_prepare_altcontrol	data/import/C1_valid_sample_5.dta.gz data/import/health_panel_q_wide.dta	data/estdat_altcontrol.dta	Alternative control group sample
01.0_table01	data/estdat.dta	output/main_$out_dyn.dta	Table 1
01.0_table02	data/estdat.dta	output/main_$out_dyn.dta	Table 2
02.1_figure01	output/main_$out_dyn		Figure 1
02.1_figure02	data/estdat_altcontrol.dta		Figure 2
02.1_figure03	data/estdat.dta data/import/mechs_firingthreat_penr_benr_fired.dta		Figure 3
02.1_figure04	data/estdat.dta		Figure 4
03.1_tableA2	data/estdat.dta		Table A.2
03.1_tableA3	data/estdat.dta		Table A.3
03.1_tableA4	data/estdat.dta		Table A.4
03.1_tableA5	data/estdat.dta		Table A.5
03.1_tableA6	data/estdat.dta		Table A.6
03.1_tableA7	data/estdat.dta		Table A.7
03.1_tableA8	data/estdat.dta		Table A.8
03.1_tableA9	data/estdat.dta data/import/partnerwages.dta		Table A.9
03.1_tableA10	data/estdat.dta data/import/shiftworkers.dta data/import/firstbirths.dta		Table A.10
03.2_figureA2	data/estdat.dta		Figure A.2
03.2_figureA3	data/import/valid_sample_4.dta		Figure A.3
03.2_figureA4	data/estdat.dta data/import/employment_length.dta		Figure A.4
03.2_figureA5	data/estdat.dta		Figure A.5
03.2_figureA6	data/estdat.dta		Figure A.6

Continued on the next page . . .

Do-file	Input data	Main output data	Produces
03.2_figureA7	data/estdat.dta data/import/injuries.dta data/import/injuries_auva.dta		Figure A.7
03.2_figureA8	data/import/valid_sample_5EXT.dta		Figure A.8
03.2_figureA9	data/estdat.dta data/import/hospstays.dta		Figure A.2
03.2_figureA10	output/main_$out_dyn.dta		Figure A.10
03.2_figureA11	data/estdat.dta		Figure A.11
03.2_figureA12	data/estdat.dta data/import/orig_and_early_sample_5INC.dta		Figure A.12
03.2_figureA13	data/estdat.dta data/import/orig_and_early_sample_5INC.dta data/import/employment_length.dta data/import/wagematch.dta		Figure A.13
03.2_figureA14	data/estdat.dta data/import/valid_sample_4P.dta data/import/valid_sample_5P.dta		Figure A.14
03.2_figureA15	data/estdat.dta data/import/cancer_i.dta		Figure A.15
03.2_figureA16	data/estdat.dta		Figure A.16
03.2_figureA17	data/estdat.dta		Figure A.17
03.2_figureA18	data/estdat.dta		Figure A.18
03.2_figureA19	data/estdat.dta data/import/stw.dta		Figure A.19
03.2_figureA20	data/estdat.dta		Figure A.20
03.2_figureA21	data/estdat.dta data/import/dailywages.dta		Figure A.21
03.2_figureA22	data/import/mechs_mls_firing.dta		Figure A.22

Some notes:

- The do-files produce more output data in the folder `output/` than listed here. The reason is that we save regression outputs using the `parmest` command as a `dta` file and draw event studies based on these files. Except for the main regressions (`output/main_$out_dyn.dta`), which are used in other do-files, these temporary data sets can safely be erased after executing the respective do-file.
- We export most tables row-by-row and piece them together in LaTeX.

References

Zweimüller, J., Winter-Ebmer, R., Lalive, R., Kuhn, A., Wuellrich, J.-P., Ruf, O. & Büchi, S. (2009), Austrian Social Security Database, Working Paper 0903, The Austrian Center for Labor Economics and the Analysis of the Welfare State.