Code Documentation for Labor in the Boardroom

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Our main dataset is administrative employer-employee data from IAB merged with Bureau van Dijk Orbis (BvD) firm-level data (Antoni et al., 2018). Access to IAB data for replication purposes is controlled by IAB, and regulated by § 75 of the German Social Code, Book X. Charges may apply for both access to IAB and BvD data.

Nominal outcomes are deflated using CPI data for Germany from FRED, using 2015 as base year (`https://fred.stlouisfed.org/series/DEUCPIALLMINMEI`).

We also draw on the Mannheim Enterprise Panel (MUP) data (Bersch et al., 2014). MUP data access is permitted at the research data center at ZEW. We include the do-files that generate the figures.

Finally, we draw on the Hoppenstedt Aktienführer data for board membership information retrieved from `https://digi.bib.uni-mannheim.de/aktienf%C3%BChrer/data/index.php`. The historical Hoppenstedt Aktienführer data have been digitized through a project by the German Research Foundation (DFG).

Software Requirements: Stata 15.

General instructions to run the code

1. The do-files in the `iab_code/` folder prepare and analyze the data on the IAB server. Adapt the appropriate paths in the master do file, `0_master.do`.
2. Place the resulting output into the folder `iab`. Adjust the folders to follow this format: `iab/201/...dta`.
3. The Hoppenstedt board data needs to be placed into the folder `Hoppenstedt`.
4. The do-files in the `exhibits_code` folder produce the exhibits in the paper. Adapt the paths in `exhibits_code/0_Master.do`, and run it. All exhibits will be run and stored in the specified folders.
5. We include the do files generating the MUP figures, which are run in the MUP research data center.

Code Documentation

IAB Data Preparation and Analysis

The code is stored in `iab_code/` and must be run on the IAB server using the master do file `0_master.do`. The output should be stored in the folder `iab/` to subsequently create the exhibits.

Globals:

- `11_globals.do` sets non-outcome variable globals (bandwidths, regression specifications, etc.).
- `12_globals_outcomes.do` sets the outcome variables.

Data Preparation:

- `101_Build_SIAB_prep.do` prepares the worker-level data.
- `102_Build_SIAB_timeseries_variables.do` generates variables such as tenure and Mincer residuals that draw on worker-level panel data.
- `103_Build_SIAB_collapse.do` collapses the worker-level data at the firm level.
- `104_Build_akm_estimation.do` estimates the AKM fixed effects.
- `105_Build_IAB_analysis_sample.do` cleans the sample and implements restrictions.
- `106_Build_Winsorization.do` winsorizes the outcomes.
- `114_CBA_Betriebspanel.do` processes the LIAB/Establishment survey data for the heterogeneity analysis.
- `115_extract_industry_characteristics.do` extracts industry characteristics for the heterogeneity analysis.

Analysis:

- `201_Analysis_RD.do` conducts the regression discontinuity (RD) analyses.
- `202_Analysis_DiD.do` conducts the difference-in-differences (DiD) analyses.
- `203_Analysis_Diff.do` conducts the difference (Diff) analyses.
- `204_Analysis_DiD_RD_Figures.do` produces the output for the binned scatter plots averaged by incorporation dates and local polynomial estimations.
- `205_Analysis_Bandwidth.do` conducts the bandwidth analyses using RD, DiD and Diff specifications.
- `206_Analysis_DonutHole.do` conducts the donut hole analyses using RD, DiD and Diff specifications.
- `207_Analysis_PlaceboReformYear.do` conducts the placebo analyses using RD, DiD and Diff specifications.
- `208_Analysis_McCrary.do` conducts the McCrary analysis and other density checks.
- `209_Analysis_DiD_Heterogeneity.do` conducts the heterogeneity analysis for DiD.
- `210_Analysis_Diff_Heterogeneity.do` conducts the heterogeneity analysis for Diff.
- `211_Analysis_RD_Heterogeneity.do` conducts the heterogeneity analysis for RD.
- `212_Analysis_Rent_Sharing.do` conducts the rent sharing analysis.
- `213_Analysis_Industry_Selection.do` conducts the analysis of industry composition of entrants using RD, DiD and Diff specifications.
- `214_Analysis_Industry_Selection_nonzero.do` conducts the same analysis as `213_Analysis_Industry_Selection.do`, but restricting to industries with non-zero observation post-reform.

IAB Exhibits

The code is stored in `exhibits_code/` and must be run using the master do file `0_Master.do`. Figures and tables will be stored in `figures/` and `tables/`.

Tables:

- `Set_Table_Names.do` sets the globals to write column names.
- `Table_BvD_IAB.do` creates: Table I: Effect of Shared Governance on Wages; Table A.5: Effect of Shared Governance on Wages (Non-Missing Fixed Assets); Table A.6: Effect of Shared Governance on Wages (Non-Missing Value Added per Worker); Table A.8: Effect of Shared Governance on Profitability; Table A.10: Effect of Shared Governance on Skill Structure, Outsourcing, and Tenure (Matched Employer-Employee Data).
- `Table_ProductivityMain.do` creates: Table II: Effect of Shared Governance on Labor Productivity and Capital Intensity.
- `Table_StockSelection.do` creates: Table A.1: Differential Trends for Incorporation of Stock Corporations.
- `Table_Industry_Table.do` creates: Table A.2: 1994 Reform and Industry Composition of Stock Corporations.
- `Table_Wagedistribution.do` creates: Table A.3: Effects on the Wage Distribution.
- `Table_BvD_IAB_placebo.do` creates: Table A.4: Placebo: Effect of Shared Governance on Wages (Placebo Reforms in 1996 and 1997); Table A.9: Placebo: Effect of Shared Governance on Profitability (Placebo Reforms in 1996 and 1997).
- `Table_Productivity_PlaceboRD.do` creates: Table A.7: Placebo: Effect of Shared Governance on Labor Productivity and Capital Intensity (RD and Placebo Reforms in 1996 and 1997).
- `Table_Heterogeneity.do` creates: Table A.11: Heterogeneity of Shared Governance Effects on Wages.

Figures:

- `Figure_Mccrary.do` creates: Figure III(a): Frequency of Incorporation and McCrary Test; Figure III(b): Selection Into Stock Corporation Status.
- `Figure_Rawdata.do` creates Figures IV(a), IV(b) V(a) V(b): Effect of Mean Log Wage/AKM Pay Premia Over Time, By Group/By Incorporation Date and Legal Form; Figures VII(a), VII(c) VII(e), A.6(a), A.6(c), A.6(e) Effects on Labor Productivity and Capital Intensity, By Group.
- `Figure_Bandwidth.do` creates: Figures IV(c), IV(d), V(c) ,V(d): Effect of Mean Log Wage/AKM Pay Premia Over Time extending the bandwidth for the Differences and the DiD; Figures VII(b), VII(d) VII(f) Effects on Labor Productivity and Capital Intensity, extending the bandwidth for the Differences; Figures A.4(a), (c): Effect of Mean Log Wage/AKM Pay Premia Over Time extending the bandwidth for the RD; Figures A.6(b), (d), (f): Effects on Labor Productivity and Capital Intensity extending the bandwidth for the DiD.
- `Figure_WageDistribution.do` creates: Figure VI: Effects on the Wage Distribution.

- `Figure_Rentsharing.do` creates: Figure VIII: Rent Sharing in Stock Corporations with and without Shared Governance: Firms' Pay Premia (AKM Firm Fixed Effects) and Value Added per Worker; Figure A.7: Pooled Rent Sharing: Firms' Pay Premia (AKM Firm Fixed Effects) and Value Added per Worker.
- `Figure_Heterogeneity_coefplot.do` creates: Figure IX: Heterogeneity Analysis: Wage Effect (AKM Pay Premia) of Shared Governance in Subsamples of Firms.
- `Figure_Industry.do` creates: Figure A.1: Balance of Industry Composition.
- `Figure_DonutHole.do` creates: Figures A.4(b), (d): Effect of Mean Log Wage/AKM Pay Premia Over Time Excluding Months Around Reform Date for RD.
- `Figure_WageDistribution_Appendix.do` creates: Figure A.5: Additional RD Specifications: Effects on the Wage Distribution.
- `Figure_Heterogeneity_coefplot_Appendix.do` creates: Figure A.8: Additional Results for Heterogeneity Analysis: Wage Effect of Shared Governance in Subsamples of Firms.

Non-IAB Exhibits

The following exhibits are created using sources other than the administrative employer-employee data from IAB merged with Bureau van Dijk Orbis (BvD) firm-level data.

Hoppenstedt Aktienführer: Data retrieved from `https://digi.bib.uni-mannheim.de/aktienf%C3%BChrer/data/index.php`.

- `exhibits_code/Figure_HoppenstedtShareWorkersBoardSeats.do` creates: Figure II(b): Empirical Share of Worker Board Seats in Listed Stock Corporations.

Mannheim Enterprise Panel (MUP): The analysis is run at the MUP data center. We restrict our sample to firms incorporated after 1990 and firms with the following legal forms: "GmbH Co. KG ", "GmbH", and "AG". The relevant do-files are stored in `MUP_code/`. After running the master do file, the following do files generate the figures:

- `MUP_Prepare_Survival` and `MUP_Analysis_Survival.do` create: Figure III(c): Survival Probability by Group; Figure A.3: Firm Survival and Bankruptcy by Incorporation Date and Corporation Type.
- `MUP_Analysis_Mccrary` creates: Figure A.1(a): Frequency of Incorporation.
- `MUP_Analysis_IndustryComposition.do` creates: Figure A.1(b) Balance of Industry Composition.

1 Bibliography

Antoni, Manfred, Katharina Koller, Marie-Christine Laible, and Florian Zimmermann. 2018. "Orbis-ADIAB: From Record Linkage Key to Research Dataset." *FDZ-Methodenreport 04/2018 (en). Editors Rainer Schnell, Manfred Antoni* .

Bersch, Johannes, Sandra Gottschalk, Bettina Müller, and Michaela Niefert. 2014. "The Mannheim Enterprise Panel (MUP) and Firm Statistics for Germany." *ZEW-Centre for European Economic Research Discussion Paper* (14-104).