1. Quantitative results in manuscript
To replicate the results from the benchmark calibration and all the counterfactual experiments, download *all* files in the 'quantitative_model' directory in the Harvard Dataverse dataset associated with the "Labor Market Conflict and the Decline of the Rust Belt" article.

Before running any of the MATLAB scripts named 'solve_model_XX(_…).m, change the working directory to your local path in line 5 of each .m file.

The numerical algorithm requires significant processing power and memory. In order to keep the run time manageable, run the code on a computer with multiple processors and a large enough memory. A typical desktop or laptop computer in most instances does not have enough processing power or memory to run the code.

1.a. Benchmark calibration
Run the 'solve_model_BM.m' MATLAB script. The final workspace with all results will be saved in 'solution_model_BM.mat' in the same directory. The model and data moments (targeted and a selection of non-targeted) are printed to the screen at the end of script. If you are running the file in batch mode you may need to initiate a log file in order to see the screen output (some environments will generate such a file, often using the .out file name extension automatically).

The path of the Rust Belt's employment share is used in Figure 8 and the cumulative change in the Rust Belt's employment share is reported in the first row of Table 5.

1.b. Counterfactual experiments

1.b.i. Counterfactual experiments reported in Figure 8

Run the 'solve_model_CF_no_conflict.m' MATLAB script for the counterfactual experiment where unions in the Rust Belt have the same bargaining power as unions elsewhere. The final workspace with all results will be saved in 'solution_model_CF_no_conflict.mat' in the same directory.

Run the 'solve_model_CF_no_intl_forces.m' MATLAB script for the counterfactual experiment where foreign producers of Rust Belt varieties do not benefit from an exogenous productivity "boost". The final workspace with all results will be saved in 'solution_model_CF_no_intl_forces.mat' in the same directory.

Run the 'solve_model_CF_neither.m' MATLAB script for the counterfactual experiment where unions in the Rust Belt have the same bargaining power as unions elsewhere and foreign producers of Rust Belt varieties do not benefit from an exogenous productivity "boost". The final workspace with all results will be saved in 'solution_model_CF_neither.mat' in the same directory.

1.b.ii. Counterfactual experiments reported in Table 5

Row 1 in Table 5: see benchmark calibration above.

Row 2 in Table 5: Run the 'solve_model_CF_short_strikes.m' MATLAB script for the counterfactual experiment where strikes are shortened by lowering the value of 'kappa' from 0.12 to 0.105. The final workspace with all results will be saved in 'solution_model_CF_short_strikes.mat' in the same directory.

Row 3 in Table 5: Run the 'solve_model_CF_s_trend.m' MATLAB script for the counterfactual experiment where the investment share exhibits a time trend. The initial value (in 1950) in this experiment is slightly lower than in the benchmark calibration and then increases exogenously. The final workspace with all results will be saved in 'solution_model_CF_s_trend.mat' in the same directory.

Row 4 in Table 5: Run the 'solve_model_CF_more_strikes.m' MATLAB script for the counterfactual experiment where the decline of the unions' bargaining power is delayed by a full decade.. The final workspace with all results will be saved in 'solution_model_CF_more_strikes.mat' in the same directory.

Replication of figures in manuscript

All files to replicate figures 1-8 in the manuscript are in the 'replicate_figures' directory in the Harvard Dataverse dataset associated with the "Labor Market Conflict and the Decline of the Rust Belt" article. The replication is not computationally demanding; the files should run on a typical desktop or laptop computer.

Run 'ReplicateFigure1_to_3.do' using STATA to replicate figures 1, 2, and 3 in the manuscript. Read and follow the detailed instructions in the preamble of the .do file before running the script.

To replicate figures 4-8 in the manuscript, run the 'ReplicateFigure4_to_8.m' using MATLAB. Read and follow the detailed instructions in the preamble of the .m file before running the script.

The two replication files call other files in the same directory and in the 'quantitative_model' directory. Verify that all files are accessible before running 'ReplicateFigure1_to_3.do' and 'ReplicateFigure4_to_8.m'.

Replication of tables in manuscript

All files to replicate figures 1-8 in the manuscript are in the 'replicate_tables' directory in the Harvard Dataverse dataset associated with the "Labor Market Conflict and the Decline of the Rust Belt" article. The replication is not computationally demanding; the files should run on a typical desktop or laptop computer.

The number of work stoppages by state and 3-digit SIC industry reported in Table 1 and used in the regressions in Table 2 are originally reported in Work Stoppages Historical File, 1953-1981 [United States]. 2006. Washington, D.C.: U.S. Bureau of Labor

Statistics. The document is available at https://doi.org/10.3886/ICPSR08156.v1. The ZIP archive “DS1 1952-1977, All Work Stoppages” in the “Data & Documentation” tab includes the “08156-0001-Data.txt” file containing the raw work stoppages data. The same data are available for use in STATA in the “workstoppages_raw.dta” file. CONSIDER RENAMING THE FILE “08156-0001-Data.dta”.

The “Data preparation for RB_isaac.do” file builds the Stata dataset used in the regression with data in the following sub-directories:

- /IPUMS Census/…
- /Temperature
- /Unionization rate
- /Imports
- /Population
- /work stoppages
- /strikes 1927-1936 (Stata)
- /Crosswalks

- The .do file that replicates the regression results in Tables 2, A.1, A.3, and A.4, using STATA calls the ‘outreg2’ command. It can be installed by typing:

ssc install outreg2