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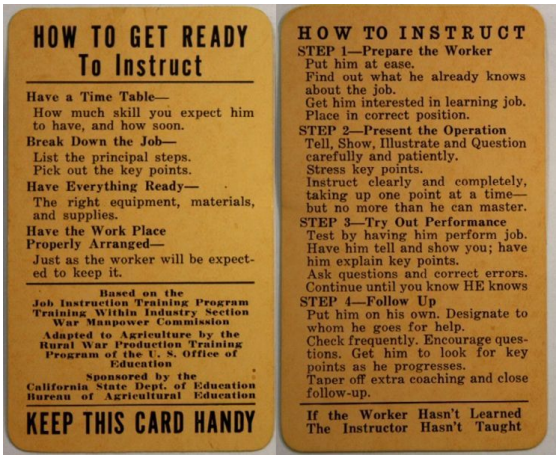
Online Appendix

A Additional Figures and Tables

Figure A1: Instruction Cards for Each J-Module



HOW TO GET READY
To Instruct

Have a Time Table—
How much skill you expect him to have, and how soon.
Break Down the Job—
List the principal steps.
Pick out the key points.
Have Everything Ready—
The right equipment, materials, and supplies.
Have the Work Place Properly Arranged—
Just as the worker will be expected to keep it.

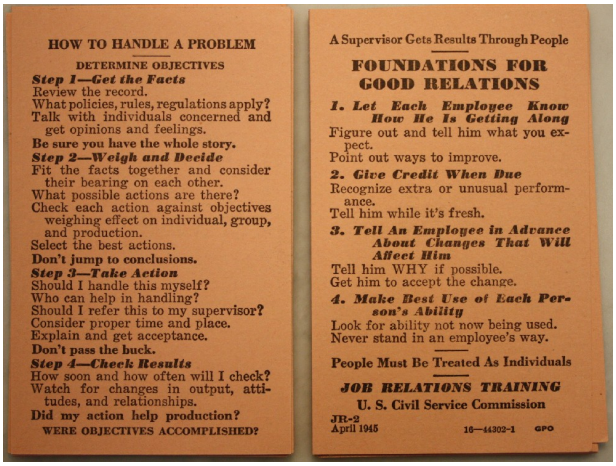
Based on the Job Instruction Training Program Training Within Industry Section War Manpower Commission
Adapted to Agriculture by the Rural War Production Training Program of the U. S. Office of Education
Sponsored by the California State Dept. of Education Bureau of Agricultural Education

KEEP THIS CARD HANDY

HOW TO INSTRUCT
STEP 1—Prepare the Worker
Put him at ease.
Find out what he already knows about the job.
Get him interested in learning job.
Place in correct position.
STEP 2—Present the Operation
Tell, Show, Illustrate and Question carefully and patiently.
Stress key points.
Instruct clearly and completely, taking up one point at a time—but no more than he can master.
STEP 3—Try Out Performance
Test by having him perform job.
Have him tell and show you; have him explain key points.
Ask questions and correct errors.
Continue until you know HE knows
STEP 4—Follow Up
Put him on his own. Designate to whom he goes for help.
Check frequently. Encourage questions. Get him to look for key points as he progresses.
Taper off extra coaching and close follow-up.

If the Worker Hasn't Learned
The Instructor Hasn't Taught

Panel A: Job Instruction



HOW TO HANDLE A PROBLEM
DETERMINE OBJECTIVES
Step 1—Get the Facts
Review the record.
What policies, rules, regulations apply?
Talk with individuals concerned and get opinions and feelings.
Be sure you have the whole story.
Step 2—Weigh and Decide
Fit the facts together and consider their bearing on each other.
What possible actions are there?
Check each action against objectives weighing effect on individual, group, and production.
Select the best actions.
Don't jump to conclusions.
Step 3—Take Action
Should I handle this myself?
Who can help in handling?
Should I refer this to my supervisor?
Consider proper time and place.
Explain and get acceptance.
Don't pass the buck.
Step 4—Check Results
How soon and how often will I check?
Watch for changes in output, attitudes, and relationships.
Did my action help production?
WERE OBJECTIVES ACCOMPLISHED?

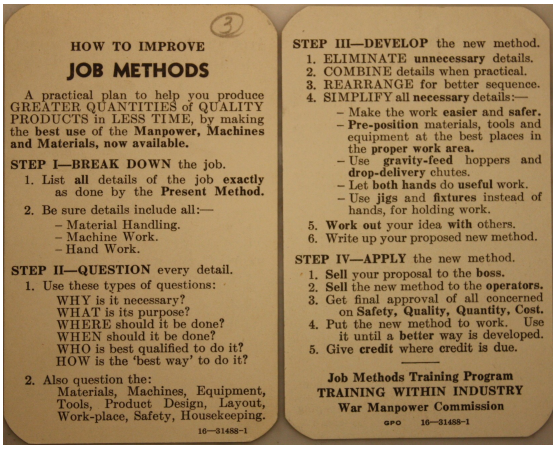
A Supervisor Gets Results Through People

FOUNDATIONS FOR GOOD RELATIONS
1. Let Each Employee Know How He Is Getting Along
Figure out and tell him what you expect.
Point out ways to improve.
2. Give Credit When Due
Recognize extra or unusual performance.
Tell him while it's fresh.
3. Tell An Employee in Advance About Changes That Will Affect Him
Tell him WHY if possible.
Get him to accept the change.
4. Make Best Use of Each Person's Ability
Look for ability not now being used.
Never stand in an employee's way.

People Must Be Treated As Individuals

JOB RELATIONS TRAINING
U. S. Civil Service Commission
JR-2
April 1945 16—14302-1 GPO

Panel B: Job Relations



HOW TO IMPROVE
JOB METHODS

A practical plan to help you produce GREATER QUANTITIES of QUALITY PRODUCTS in LESS TIME, by making the best use of the Manpower, Machines and Materials, now available.

STEP I—BREAK DOWN the job.
1. List all details of the job exactly as done by the Present Method.
2. Be sure details include all:—
– Material Handling.
– Machine Work.
– Hand Work.

STEP II—QUESTION every detail.
1. Use these types of questions:
WHY is it necessary?
WHAT is its purpose?
WHERE should it be done?
WHEN should it be done?
WHO is best qualified to do it?
HOW is the 'best way' to do it?
2. Also question the:
Materials, Machines, Equipment, Tools, Product Design, Layout, Work-place, Safety, Housekeeping.
16—31488-1

STEP III—DEVELOP the new method.
1. ELIMINATE unnecessary details.
2. COMBINE details when practical.
3. REARRANGE for better sequence.
4. SIMPLIFY all necessary details:—
– Make the work easier and safer.
– Pre-position materials, tools and equipment at the best places in the proper work area.
– Use gravity-feed hoppers and drop-delivery chutes.
– Let both hands do useful work.
– Use jigs and fixtures instead of hands, for holding work.
5. Work out your idea with others.
6. Write up your proposed new method.

STEP IV—APPLY the new method.
1. Sell your proposal to the boss.
2. Sell the new method to the operators.
3. Get final approval of all concerned on Safety, Quality, Quantity, Cost.
4. Put the new method to work. Use it until a better way is developed.
5. Give credit where credit is due.

Job Methods Training Program
TRAINING WITHIN INDUSTRY
War Manpower Commission
GPO 16—31488-1

Panel C: Job Methods

Notes. The TWI training was designed to be simple and immediately usable. To emphasize these features, the TWI administration prepared instruction cards for each J-Module that trained supervisors could keep in their pockets while they were working. These instruction cards reported the main 4 steps (and their sub-steps) that characterized each module. It is important to note that these 4 "theoretical" steps did not constitute the entirety of the TWI trainings. A large portion of the class time was dedicated to in-class student presentations on how to apply TWI concepts in their firms.

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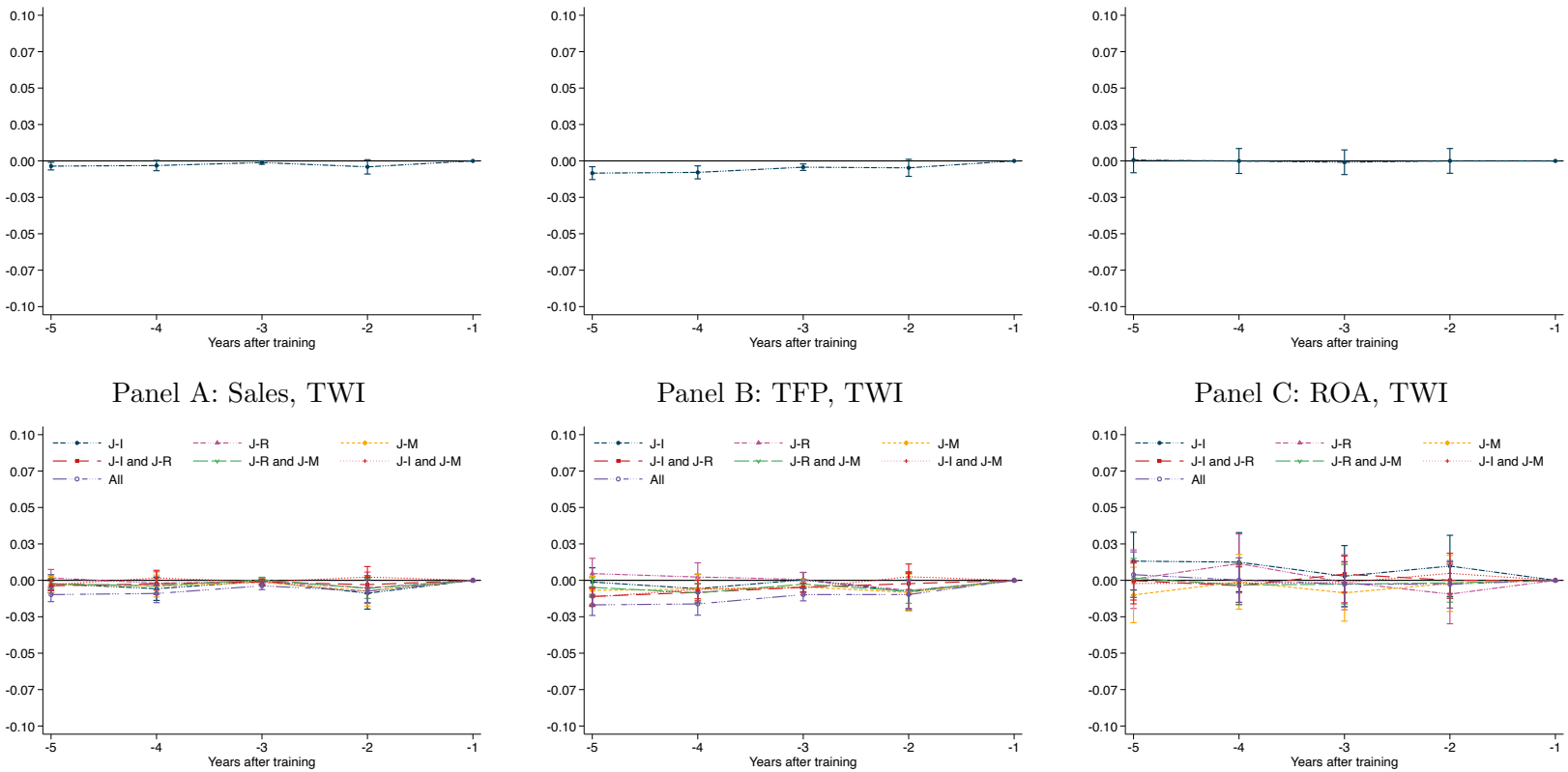
Figure A2: Pre-TWI Trends



Panel A: Sales, TWI

Panel B: TFP, TWI

Panel C: ROA, TWI

Panel D: Sales, all trainings

Panel E: TFP, all trainings

Panel F: ROA, all trainings

Notes. Coefficients of the interactions between pre-TWI period dummies and either a single TWI dummy variable (Panels A, B, and C) or dummies with different combinations of training (Panels, D, E, and F). The omitted period is -1, one year before the TWI training. The distance from the TWI intervention for the nontrained firms is imputed using the distance from the TWI intervention of the first participating firm in the same subdistrict and application window. The dependent variables are: logged annual sales (Panels A and D), TFP computed with the Gandhi, Navarro, and Rivers (2020) method (Panels B and E), logged return on assets (ROA), computed as the ratio between profits and fixed gross assets (Panels C and F). The sample used for these graphs includes all 11,575 firms that applied to the TWI program. The vertical bars denote 95 percent confidence intervals. The standard errors are clustered at the level of subdistricts and application windows.

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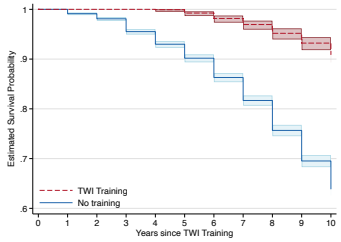
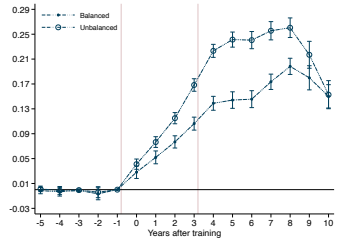
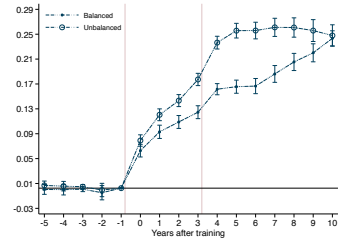
Figure A3: Influence of Higher Attrition Among Nontrained Applicants



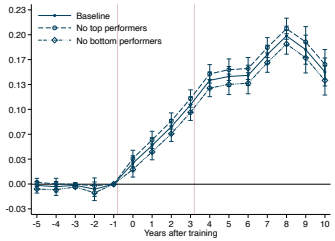
Panel A: Kaplan-Meier Survival Curve



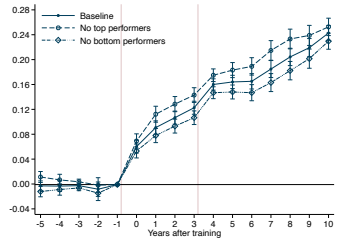
Panel B: Sales, Unbalanced sample



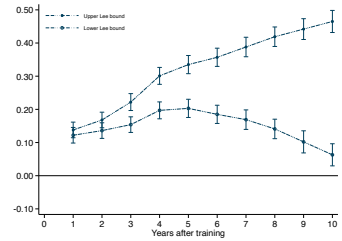
Panel C: TFP, Unbalanced sample



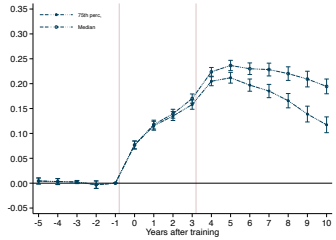
Panel D: Sales, Treatment-effect bounds



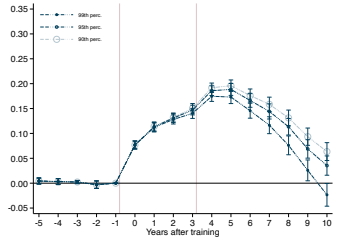
Panel E: TFP, Treatment-effect bounds



Panel F: TFP, Lee bounds



Panel G: Imputing TFP (1)



Panel H: Imputing TFP (2)

Notes. Panel A shows the Kaplan-Meier survival curves for applicants that received one training and for applicants that did not receive any training. Panels B and C show the treatment effects on log sales (Panel B) and log TFP (Panel C) using an unbalanced sample, allowing for firm exit and entry. Panels D and E bound the treatment effects by estimating extreme cases of attrition. Specifically, the regressions on exit indicate that trained applicants were 25-percentage-points less likely to exit the sample, compared with nontrained applicants. In Panels D and E, we assume that this difference in attrition affected either all the top performers or all the bottom performers among the trained applicants. In "No top performers," we remove all trained applicants in the top quartile of the distribution of sales (Panel D) or TFP (Panel E) in period -1. In "No bottom performers," we remove all trained applicants in the bottom quartile of the distribution of sales (Panel D) or TFP (Panel E) in period -1. Panel F shows Lee bounds, tightened using sector fixed effects. Panels G and H show the treatment effects when values of TFP are imputed to firms with missing balance-sheet data. Specifically, in each post-TWI year in which these firms have missing values, we imputed a different percentile of TFP, as indicated in the legend.

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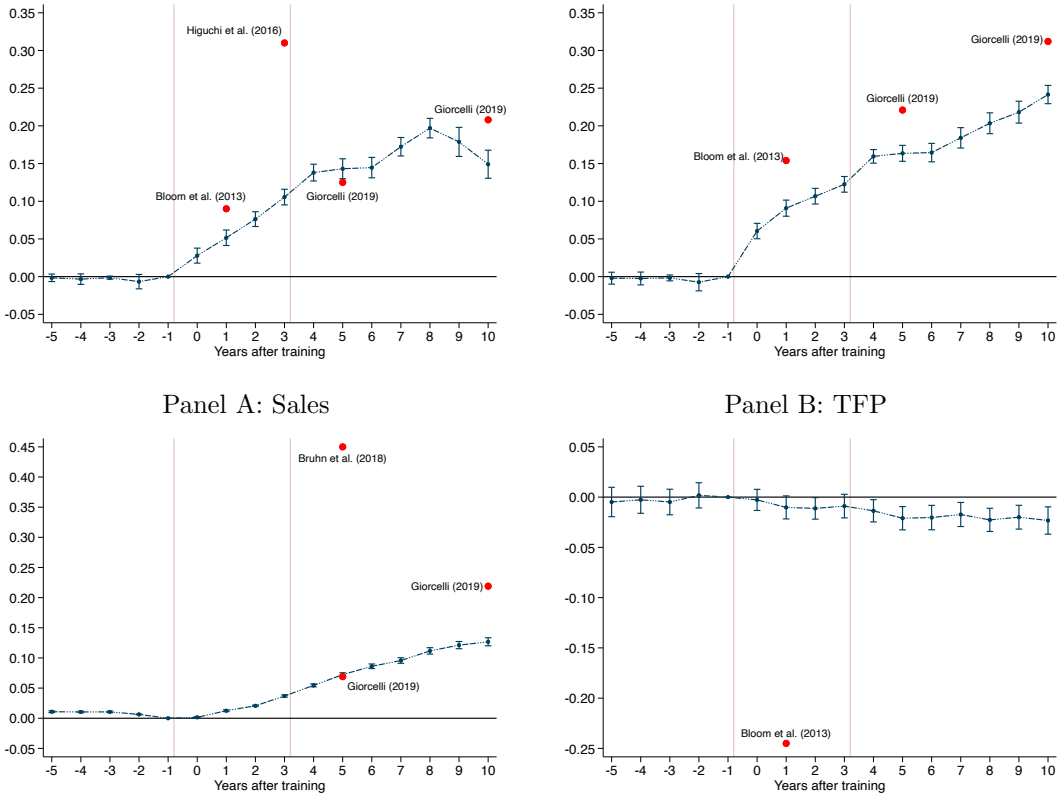
Figure A4: Comparison with Effect Sizes in the Literature



Panel A: Sales

Panel B: TFP

Panel C: Employees

Panel D: Inventory

Notes. Bloom et al. (2013*a*) shows results on output, instead of sales. All variables are logged.

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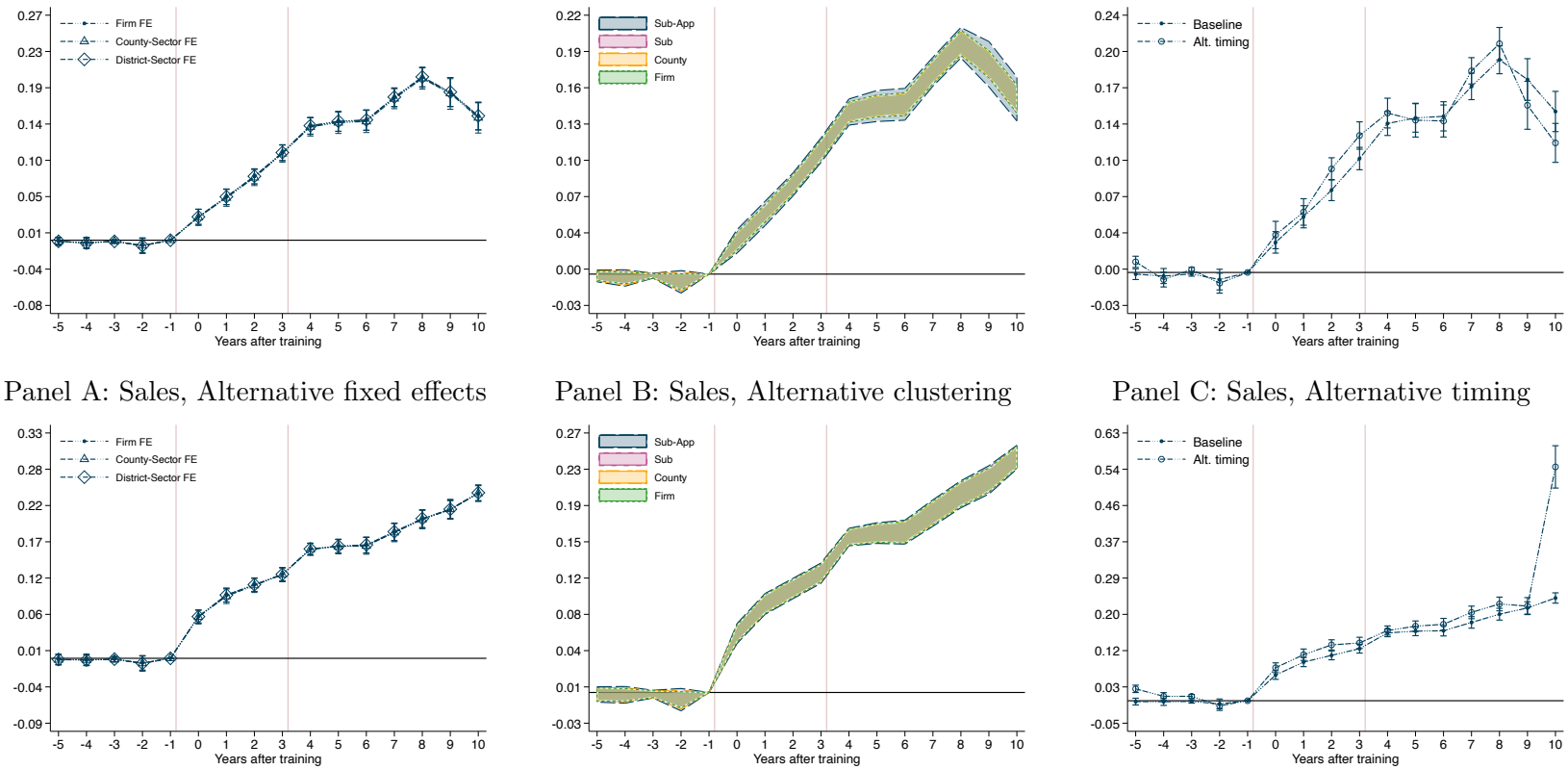
Figure A5: Robustness Checks of Main Results on Sales and TFP



Panel A: Sales, Alternative fixed effects

Panel B: Sales, Alternative clustering

Panel C: Sales, Alternative timing

Panel D: TFP, Alternative fixed effects

Panel E: TFP, Alternative clustering

Panel F: TFP, Alternative timing

Notes. The dependent variable is the log of yearly sales revenues in panels A to C and TFP, estimated using the Gandhi, Navarro, and Rivers (2020) method, in panels D to F. Panels A and D show treatment effects including firm fixed effects or district-sector-time fixed effects, instead of county-sector-time fixed effects. Panels B and E show the effect of clustering the standard errors at the subdistrict, county, or firm level, instead of at the level of subdistricts and application windows. In panels C and F, the distance from the TWI intervention for the nontrained firms is imputed using the distance from the TWI intervention of the last, instead of the first, trained firm in the same subdistrict and application window.

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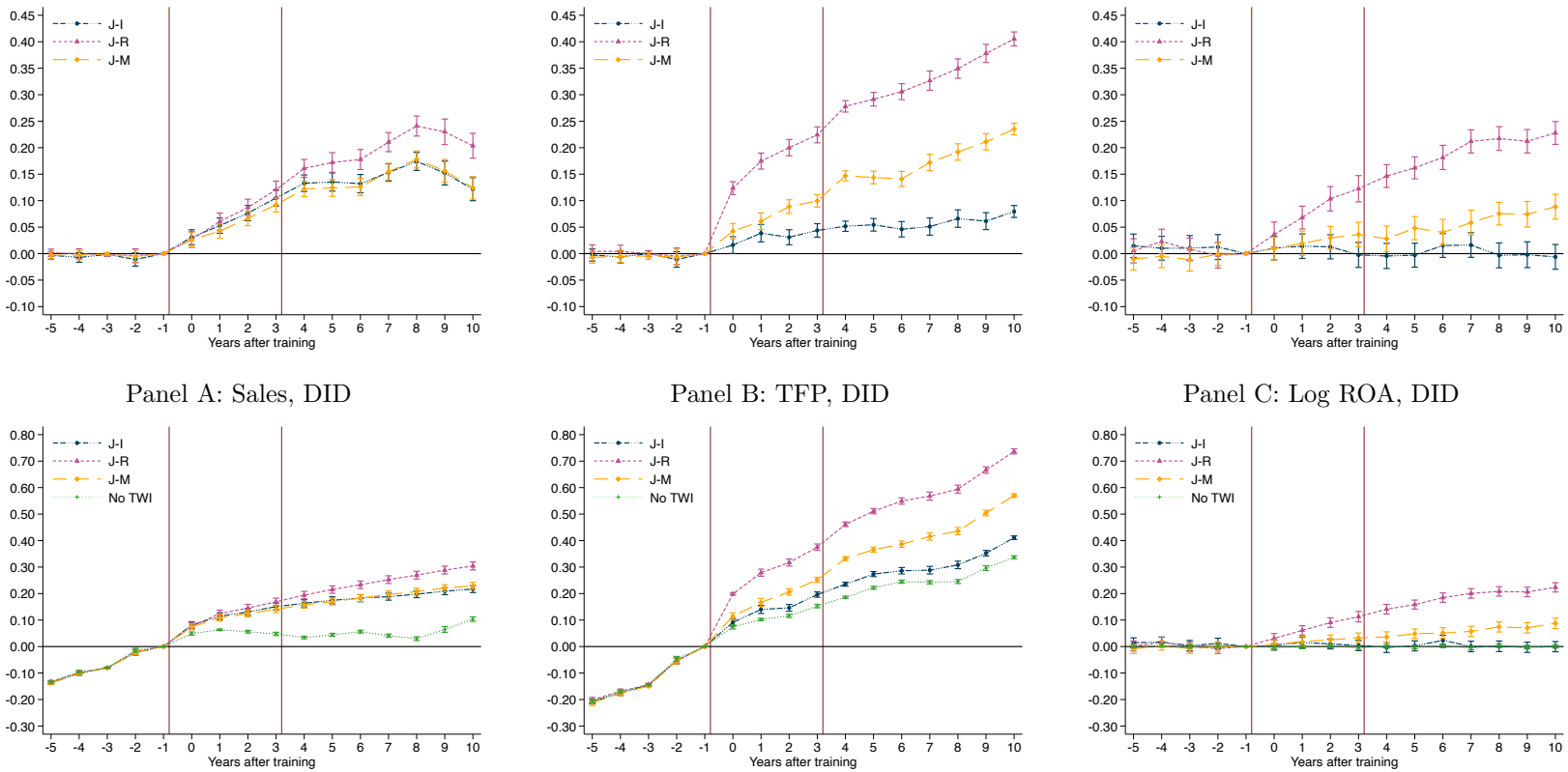
Figure A6: Effects of Different J-Modules on Firm Performance



Panel A: Sales, DID

Panel B: TFP, DID

Panel C: Log ROA, DID

Panel D: Sales, Single Difference

Panel E: TFP, Single Difference

Panel F: Log ROA, Single Difference

Notes. Panels A-C show difference-in-differences coefficients, while panels D-F show single-difference coefficients. These regressions also include fixed effects for county-sector-period combinations, the application window, and the number of days between the opening of the window and the firm application. The distance from the TWI intervention for the nontreated firms is imputed using the distance from the TWI intervention of the first participating firm in the same subdistrict and application window. The dependent variables are log sales (Panels A and D), TFP computed with the Gandhi, Navarro, and Rivers (2020) method (Panels B and D), log of return on assets (Panels C and F). The sample includes applicant firms that either received only one TWI training or no training at all. The vertical bars denote 95 percent confidence intervals. The first vertical red line identifies the beginning of the TWI program. The second vertical red line identifies the end of World War II for most applicant firms. The standard errors are clustered at the level of subdistricts and application windows.

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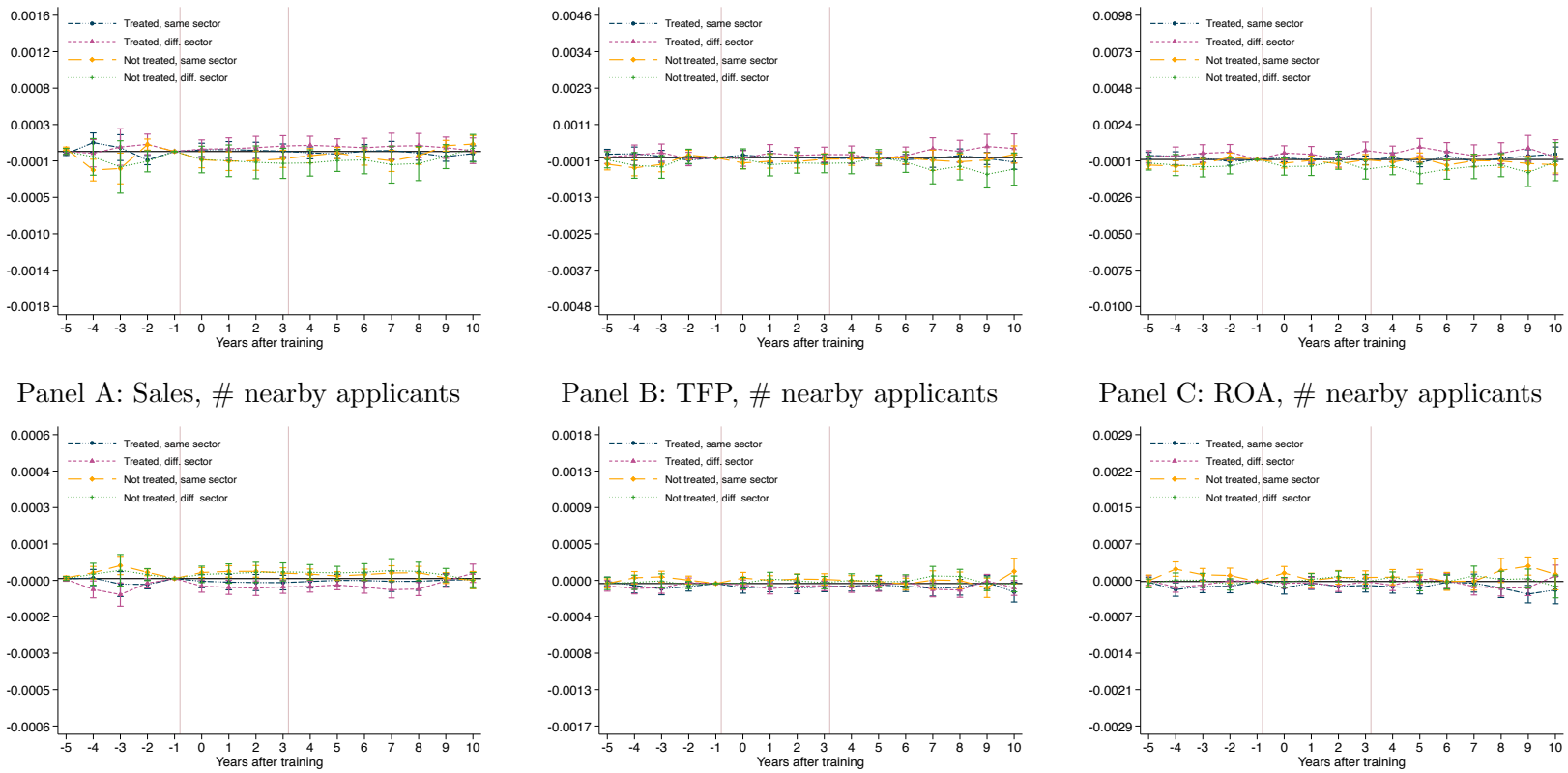
Figure A7: Horizontal Spillovers



Panel A: Sales, # nearby applicants

Panel B: TFP, # nearby applicants

Panel C: ROA, # nearby applicants

Panel D: Sales, distance to applicants

Panel E: TFP, distance to applicants

Panel F: ROA, distance to applicants

Notes. The sample used for these graphs includes 11,536 war contractors that did not apply to the TWI program and for which we found financial statements (out of 13,818 total nonapplicants). In panels A-C, the coefficients shown are the interactions between the log number of applicants in the area and period dummies. The number of applicants is divided between trained and nontrained firms and between firms in the same or different sector (agriculture, manufacturing, transportation, or services). Panels D-F use the log of the average distance from applicant firms, instead of the log number of firms. In order to compute the number of nearby applicant firms and their average distance to nonapplicant firms, we divided the 364 subdistricts into 52 groups of 7 adjacent subdistricts. Period 0 coincides with the modal treatment year within each of the 52 groups of subdistricts. All regressions also include firm fixed effects. The standard errors are clustered at the subdistrict level.

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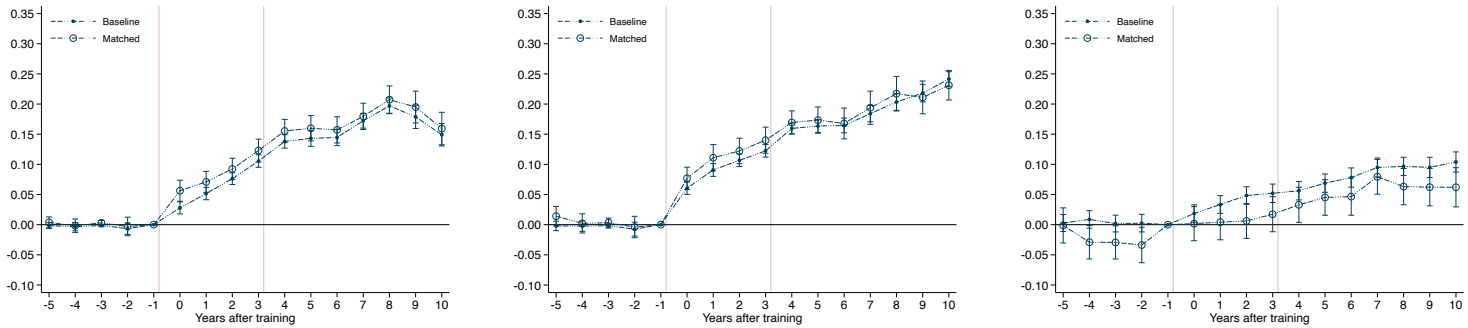
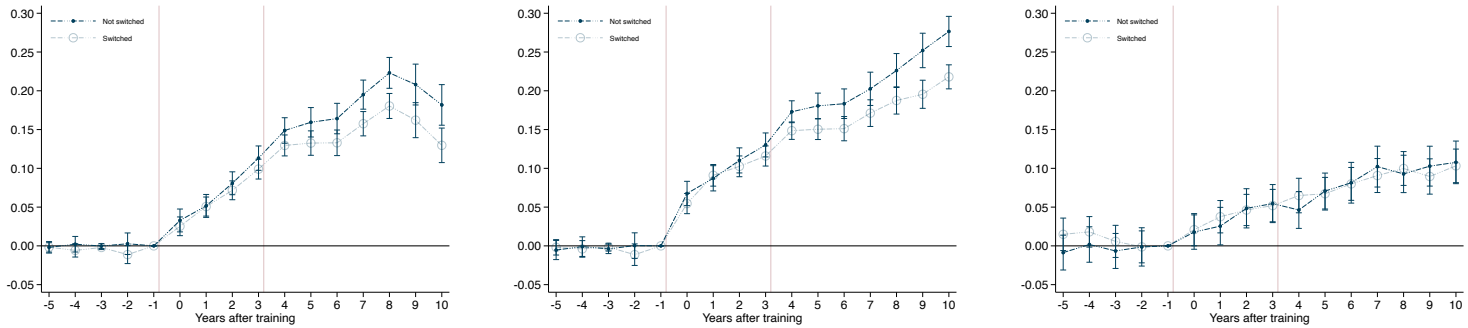
Figure A8: Effects of TWI Training on Matched Sample



Panel A: Sales Panel B: TFP Panel C: ROA

Notes. These graphs replicate the estimation shown in Figure 3 on a smaller sample of applicant firms matched to nonapplicants based on their characteristics in 1939. The matching was based on propensity scores, using a nearest-neighbor algorithm without replacement. The variables used for the matching were the number of plants and employees in 1939, TFP in 1939, distance from the nearest port and railroad station, sector, and fixed effects for the 22 TWI districts. The standard errors are clustered at the level of subdistricts and application windows.

Figure A9: Change in Status Quo, Switching to War Production



Panel A: Sales Panel B: TFP Panel C: ROA

Notes. These graphs show the interactions between the training variables and the period dummies distinguishing between firms that did or did not switch production during World War II. Specifically, *Switched 2-digit SIC* equals one if a firm's war products were in different 2-digit 1939 SIC codes. The standard errors are clustered at the level of subdistricts and application windows.

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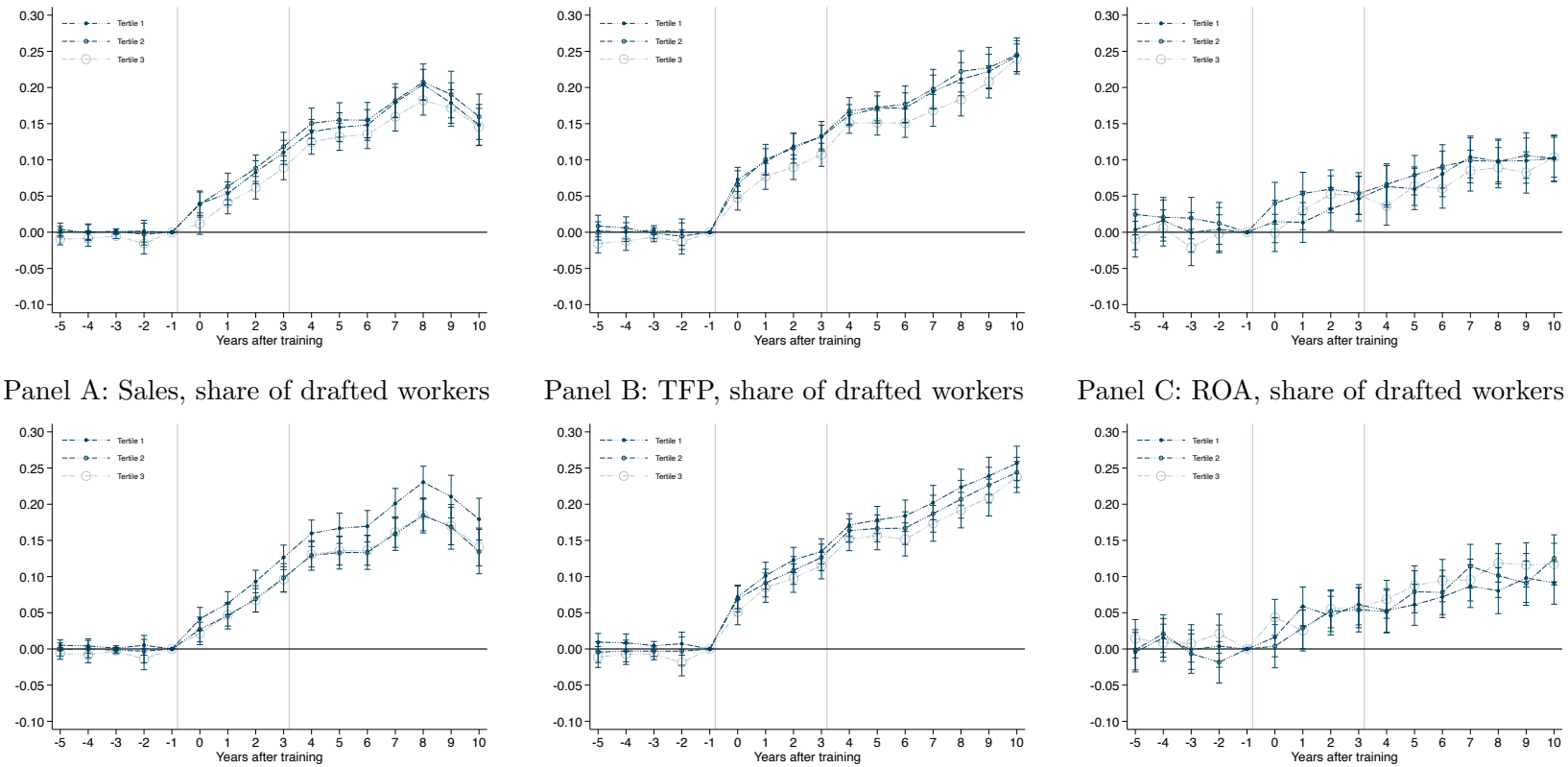
Figure A10: Loss of Human Capital



Panel A: Sales, share of drafted workers

Panel B: TFP, share of drafted workers

Panel C: ROA, share of drafted workers

Panel D: Sales, share of managers leaving

Panel E: TFP, share of managers leaving

Panel F: ROA, share of managers leaving

Notes. Panels A to C show the treatment effects estimated separately by tertiles of the share of employees drafted during World War II. Panels D to F show the treatment effects estimated separately by tertiles of the share of top managers leaving the firm by 1955. To compute this variable, we compare the list of top executives in 1955 (or last year in which a firm is observed) to the list of top executives in period 0, the year of the TWI training. All regressions include the training variable in isolation, as well as fixed effects for county-sector-period combinations, the application window, and the number of days between the opening of the window and the firm application. The standard errors are clustered at the level of subdistricts and application windows.

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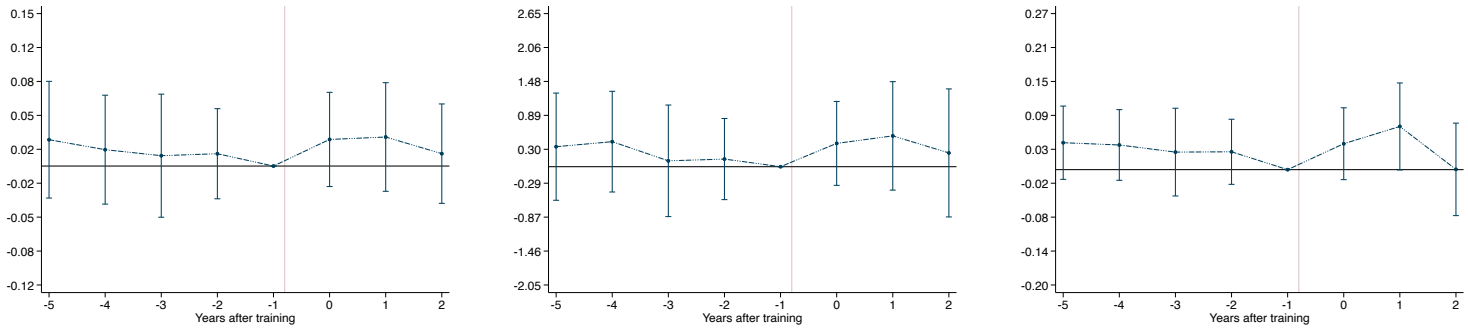
Figure A11: Effects of TWI Training on War Contracts



Panel A: Has contracts | Panel B: Value contracts | Panel C: Number contracts

Notes. These graphs show the effects of TWI training on variables that describe the relationship between applicant firms and the federal government. *Has contracts* is a dummy equal to one for firms with at least one new contract in a given year. *Number contracts* and *Value contracts* are the inverse hyperbolic sine function (due to many zeros) of the number and value of war contracts granted to each firm per year. These variables come from war contracts data and are therefore available only between 1940 and 1945. The number of firms with nonmissing values are 3,974 in period -5, 7,332 in period -4, 10,607 in period -3, 11,545 in period -2, 11,567 in period -1, 11,575 in period 0, 7,601 in period 1, and 4,243 in period 2. All regressions also include fixed effects for county-sector-period combinations, the application window, and the number of days between the opening of the window and the firm application. Standard errors are clustered at the level of subdistricts and application windows.

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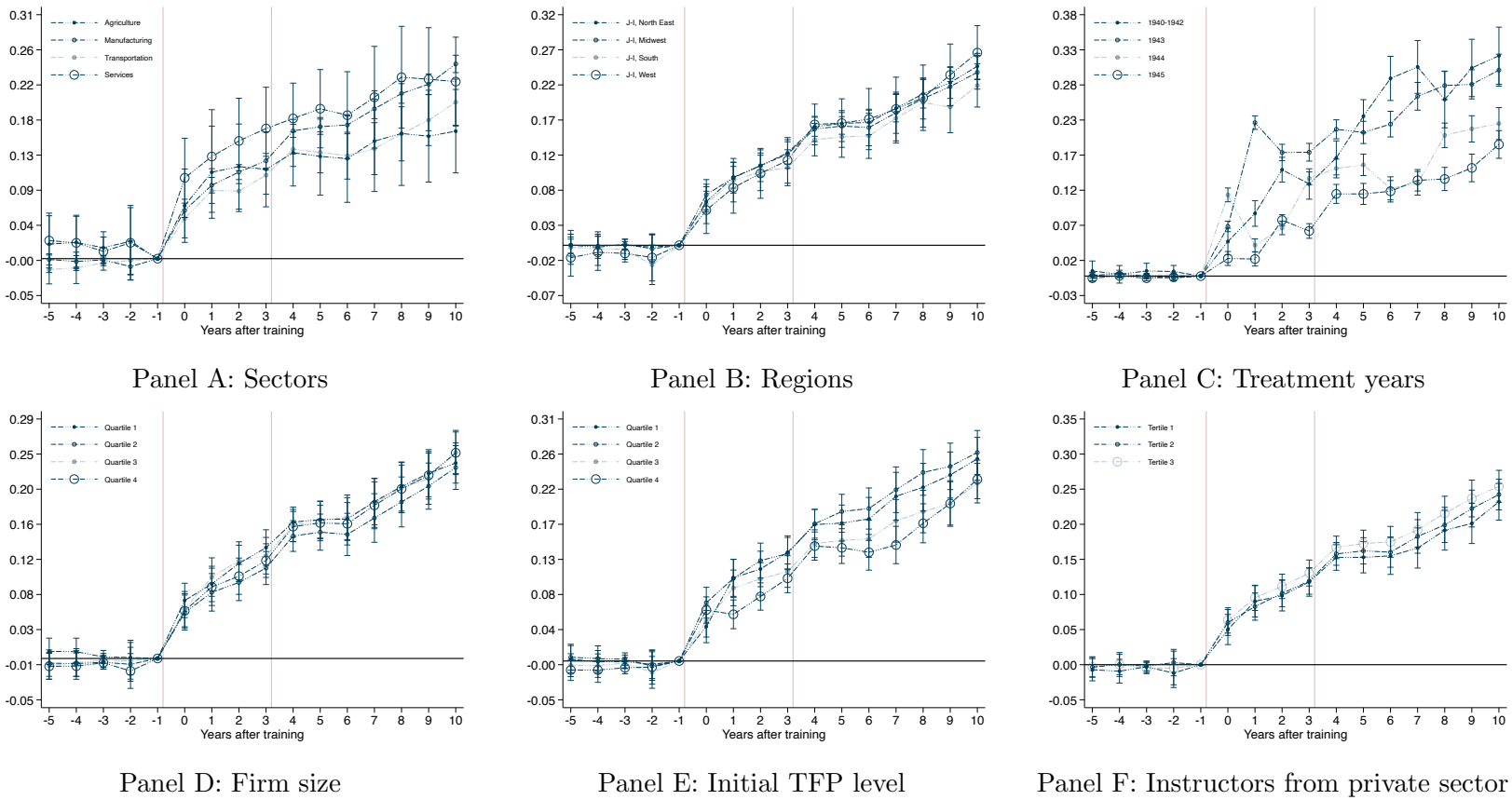
Figure A12: Other Heterogeneous Effects



Notes. In all panels, the dependent variable is the log of TFP, estimated using the Gandhi, Navarro, and Rivers (2020) method. Panel A shows the treatment effects estimated separately by sector. Panel B shows the treatment effects estimated separately by U.S. Census Bureau regions. Panel C shows the treatment effects estimated separately by training year. Panel D shows the treatment effects estimated separately by quartiles of workforce size in period -1. Panel E shows the treatment effects by quartiles of TFP in period -1. Panel F shows the treatment effects by tertiles of the distribution of TWI instructors from the private sector. All regressions also include fixed effects for county-sector-period combinations, the application window, and the number of days between the opening of the window and the firm application. The standard errors are clustered at the level of subdistricts and application windows.

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Table A1: List of 22 TWI Districts

District Name	States	Main Office Location
1) Upper New England	Maine; Massachusetts; Vermont; New Hampshire	Boston
2) Lower New England	Connecticut; Rhode Island	New Haven
3) Upstate New York	New York state (excluding Metropolitan New York)	New York
4) Metropolitan New York	Metropolitan New York	New York
5) New Jersey	New Jersey	Newark
6) Eastern Pennsylvania; Delaware	Eastern Pennsylvania; Delaware	Philadelphia
7) Maryland	Maryland	Baltimore
8) Atlantic Central	Virginia; North Carolina; South Carolina	Raleigh
9) South-Eastern States	Georgia; Florida; Alabama; Mississippi; Central and Eastern Tennessee	Atlanta
10) Ohio Valley	Southern Ohio; Southern West Virginia, Kentucky	Cincinnati
11) Western Pennsylvania	Western Pennsylvania (except Erie County); Northern West Virginia	Pittsburgh
12) Northern Ohio	Northern Ohio (expect Lucas County); Erie County (PA)	Cleveland
13) Michigan	Michigan; Lucas County (OH)	Detroit
14) Indiana	Indiana (except Lake and Porter Counties)	Indianapolis
15) Illinois	Illinois (except three counties adjacent to St. Louis, MO); South Wisconsin; Lake and Porter Counties (IN)	Chicago
16) North-Central States	North Wisconsin; Minnesota; North Dakota; South Dakota; Iowa; Nebraska	Minneapolis
17) South-Central States	Missouri; Kansas; Oklahoma; Arkansas; Western Tennessee; Madison, St. Clair, Monroe Counties (IL)	St. Louis
18) Gulf District	Texas; Louisiana	Houston
19) Mountain District	Colorado; Wyoming	Denver
20) Pacific Southwest	Southern California; Arizona; New Mexico	Los Angeles
21) Pacific Central	Northern California; Nevada; Utah	San Francisco
22) Pacific Northwest	Washington; Oregon; Idaho; Montana	Seattle

Notes. List of the 22 TWI districts with their headquarters location.

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Table A2: Balancing Tests for Applicant Firms By Treatment Year

	TWI	J-I	J-R	J-M	J-I and J-R	J-R and J-M	J-I and J-M	All
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: p-value of joint significance from regressions of training variables on firm characteristics in period -1								
Training in 1940-1942	0.46	0.93	0.45	0.49	0.40	0.77	0.38	0.70
Training in 1943	0.59	0.64	0.53	0.65	0.66	0.40	0.78	0.73
Training in 1944	0.15	0.57	0.32	0.17	0.97	0.21	0.97	0.47
Training in 1945	0.40	0.91	0.82	0.90	0.80	0.49	0.79	0.46
Panel B: p-value of joint significance from regressions of training variables on firm characteristics, including number and value of government contracts, in period -1								
Training in 1940-1942	0.60	0.98	0.59	0.54	0.30	0.84	0.47	0.67
Training in 1943	0.70	0.46	0.59	0.70	0.47	0.49	0.66	0.81
Training in 1944	0.19	0.66	0.41	0.23	0.98	0.22	0.96	0.52
Training in 1945	0.41	0.75	0.88	0.87	0.82	0.59	0.85	0.11
Panel C: p-value of joint significance from regressions of training variables on county characteristics in year 1940								
Training in 1940-1942	0.99	0.62	0.05	0.61	0.79	0.09	0.13	0.82
Training in 1943	0.06	0.51	0.38	0.07	0.55	0.67	0.17	0.12
Training in 1944	0.64	0.34	0.55	0.13	0.80	0.44	0.63	0.84
Training in 1945	0.04	0.95	0.84	0.52	0.84	0.22	0.14	0.18
Panel D: p-value of joint significance from regressions of training variables on county characteristics in year 1930								
Training in 1940-1942	0.72	0.70	0.04	0.79	0.87	0.27	0.05	0.67
Training in 1943	0.01	0.64	0.18	0.09	0.39	0.38	0.55	0.06
Training in 1944	0.28	0.32	0.42	0.06	0.45	0.73	0.86	0.84
Training in 1945	0.07	0.64	0.64	0.91	0.41	0.07	0.06	0.79
Panel E: p-value of joint significance from regressions of training variables on county characteristics in year 1920								
Training in 1940-1942	0.91	0.67	0.04	0.74	0.39	0.21	0.46	0.71
Training in 1943	0.31	0.50	0.21	0.02	0.49	0.39	0.39	0.14
Training in 1944	0.55	0.03	0.77	0.35	0.80	0.95	0.39	0.82
Training in 1945	0.02	0.70	0.60	0.70	0.36	0.34	0.14	0.27

Notes. Panel A shows the p-value of the test of joint significance of the coefficients of fifteen firm characteristics observed in period -1, distinguishing by training year. The variables are: the logs of sales, value added, number of employees, number of plants, foundation year, the value of inventory, capital, current assets, investments, number of workers' strikes, monetary compensation for workers' injuries, performance-based bonus payments, number of subsidiaries, as well as distance to the nearest railroad station and distance to the nearest port. Panel B adds the inverse hyperbolic sine function of the number and value of government contracts. The regressions also include fixed effects for county-sector pairs, the application window, and the number of days between the opening of the window and the firm application. Panels C, D, and E show the p-value of the test of joint significance of the coefficients of several county characteristics measured in 1940, 1930, and 1920, distinguishing by training year. The county-level variables are imputed to firms based on their location. These regressions include: log population, log of the manufacturing value added, log number of manufacturing establishments, log number of manufacturing employees, log average manufacturing wage, log total expenses in manufacturing, log value of manufacturing production, farms per capita, unemployment share (available only in 1930 and 1940), population per square mile, share of male residents, share of black population, share of urban population, share of illiterate population (available only in 1920 and 1930). County data are from IPUMS NHGIS, www.nhgis.org. The regressions also include fixed effects for subdistrict-sector pairs, the application window, and the number of days between the opening of the window and the firm application. Standard errors are clustered at the subdistrict-application window level.

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Table A3: Autocorrelation of the TWI Trainings

	TWI_t	$J\text{-}I_t$	$J\text{-}R_t$	$J\text{-}M_t$	J-I and $J\text{-}R_t$	J-I and $J\text{-}M_t$	J-R and $J\text{-}M_t$	All_t
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TWI_{t-1}	0.028							
	(0.022)							
$J\text{-}I_{t-1}$		0.039						
		(0.028)						
$J\text{-}R_{t-1}$			-0.020**					
			(0.010)					
$J\text{-}M_{t-1}$				0.007				
				(0.028)				
J-I and $J\text{-}R_{t-1}$					0.002			
					(0.023)			
J-I and $J\text{-}M_{t-1}$						0.001		
						(0.022)		
J-R and $J\text{-}M_{t-1}$							0.007	
							(0.019)	
All_{t-1}								0.017
								(0.024)
Observations	1,873	1,873	1,873	1,873	1,873	1,873	1,873	1,873
R^2	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001

Notes. This table shows the autocorrelation between the current and past share of firms that received different types of TWI trainings. The unit of observation is one of 364 subdistricts and one of 10 application windows. The standard errors are clustered at the subdistrict level. *** p<0.01, ** p<0.05, * p<0.1.

Table A4: Exit Regressions

	Exit	Exit	Exit	Exit	Exit	Exit
	(1)	(2)	(3)	(4)	(5)	(6)
TWI	-0.257***	-0.249***	-0.254***			
	(0.013)	(0.012)	(0.013)			
J-I				-0.221***	-0.223***	-0.225***
				(0.019)	(0.017)	(0.018)
J-R				-0.258***	-0.242***	-0.245***
				(0.019)	(0.017)	(0.019)
J-M				-0.288***	-0.280***	-0.288***
				(0.017)	(0.015)	(0.017)
Observations	6,244	6,244	6,115	6,244	6,244	6,115
R^2	0.172	0.090	0.152	0.173	0.090	0.153
County-sector FEs	Yes	No	No	Yes	No	No
District-sector FEs	No	Yes	No	No	Yes	No
Subdistrict-sector FEs	No	No	Yes	No	No	Yes
App. window FEs	Yes	Yes	Yes	Yes	Yes	Yes

Notes. *Exit* is equal to one for firms that exited the sample between period -5 and period 10. The standard errors are clustered at the level of subdistricts and application windows. *** p<0.01, ** p<0.05, * p<0.1.

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Table A5: Components of Production Function

	TFP	Log sales	Log intermediate inputs	Log capital	Log employees
	(1)	(2)	(3)	(4)	(5)
TWI x Post	0.159***	0.128***	-0.079***	-0.013***	0.060***
	(0.004)	(0.006)	(0.002)	(0.002)	(0.002)
Observations	67,472	67,472	67,472	67,472	67,472
R^2	0.326	0.184	0.391	0.426	0.148

Notes. This table shows the treatment effects for the different components of the production function. The distance from the TWI intervention for the nontreated firms is imputed using the distance from the TWI intervention of the first participating firm in the same subdistrict and application window. The sample includes applicant firms that either received only one TWI training or no training at all. The standard errors are clustered at the level of subdistricts and application windows. *** p<0.01, ** p<0.05, * p<0.1.

Table A6: Changes in Firm Structure

	Log plants	Log employees	Log managers	Log subsidiaries	Log investment
	(1)	(2)	(3)	(4)	(5)
TWI x Period 1	0.001***	0.012***	0.012	-0.009	0.062**
	(0.000)	(0.001)	(0.008)	(0.009)	(0.026)
TWI x Period 5	0.026***	0.072***	0.050***	0.016*	0.155***
	(0.002)	(0.002)	(0.008)	(0.009)	(0.025)
TWI x Period 10	0.062***	0.127***	0.108***	0.050***	0.168***
	(0.003)	(0.003)	(0.008)	(0.010)	(0.028)
Observations	67,472	67,472	67,472	67,472	67,472
R^2	0.144	0.150	0.142	0.136	0.149

Notes. This table shows the coefficients of the interactions between the training variable and three selected period dummies (out of 15 period dummies included). The omitted period is the year before the TWI training (period -1). The distance from the TWI intervention for the nontreated firms is imputed using the distance from the TWI intervention of the first participating firm in the same subdistrict and application window. The sample includes applicant firms that either received only one TWI training or no training at all. The standard errors are clustered at the level of subdistricts and application windows. *** p<0.01, ** p<0.05, * p<0.1.

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Table A7: Matching Trained and Nontrained firms

	Log sales	TFP	Log ROA	Log plants	Log employees	Log managers	Log subsidiaries	Log investment
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Panel A: Unmatched baseline				
TWI x Post	0.128***	0.159***	0.065***	0.028***	0.060***	0.057***	0.017***	0.134***
	(0.006)	(0.004)	(0.004)	(0.001)	(0.002)	(0.004)	(0.003)	(0.011)
Observations	67,472	67,472	67,472	67,472	67,472	67,472	67,472	67,472
				Panel B: Matching using nine variables observed at -1				
TWI x Post	0.127***	0.159***	0.065***	0.028***	0.060***	0.057***	0.017***	0.133***
	(0.006)	(0.005)	(0.004)	(0.001)	(0.002)	(0.004)	(0.004)	(0.012)
Observations	66,048	66,048	66,048	66,048	66,048	66,048	66,048	66,048
				Panel C: Matching using nine variables observed between -5 and -1 + period FEs				
TWI x Post	0.143***	0.169***	0.065***	0.028***	0.060***	0.058***	0.017***	0.145***
	(0.006)	(0.005)	(0.004)	(0.002)	(0.002)	(0.004)	(0.004)	(0.012)
Observations	64,080	64,080	64,080	64,080	64,080	64,080	64,080	64,080
				Panel D: Matching using eighteen variables observed at -1				
TWI x Post	0.130***	0.160***	0.065***	0.028***	0.060***	0.057***	0.017***	0.136***
	(0.006)	(0.005)	(0.004)	(0.001)	(0.002)	(0.004)	(0.004)	(0.012)
Observations	65,824	65,824	65,824	65,824	65,824	65,824	65,824	65,824
				Panel E: Matching using eighteen variables observed at -1 + district FEs				
TWI x Post	0.130***	0.160***	0.064***	0.029***	0.060***	0.055***	0.016***	0.135***
	(0.006)	(0.005)	(0.004)	(0.001)	(0.002)	(0.004)	(0.004)	(0.012)
Observations	65,808	65,808	65,808	65,808	65,808	65,808	65,808	65,808
				Panel F: Matching using eighteen variables observed at -1 + subdistrict FEs				
TWI x Post	0.128***	0.160***	0.066***	0.028***	0.060***	0.058***	0.019***	0.135***
	(0.006)	(0.005)	(0.004)	(0.001)	(0.002)	(0.004)	(0.004)	(0.012)
Observations	65,776	65,776	65,776	65,776	65,776	65,776	65,776	65,776
				Panel G: Matching using eighteen variables observed at -1 + subdistrict FEs & app. window FEs				
TWI x Post	0.133***	0.161***	0.062***	0.027***	0.060***	0.057***	0.017***	0.133***
	(0.006)	(0.005)	(0.004)	(0.002)	(0.002)	(0.004)	(0.004)	(0.012)
Observations	65,696	65,696	65,696	65,696	65,696	65,696	65,696	65,696

Notes. This table shows the results of different propensity score matching (PSM) between trained and nontrained firms. All PSM algorithms impose a common support and match without replacement: we use the Stata command `psmatch2` with options `common, ties, noreplacement, descending`. In panel B, we match using nine variables observed in period -1: number of plants, number of employees, sales, TFP, distance from the nearest port and railroad station, and three sector dummies. In panel C, we match using the same nine variables observed between period -5 and period -1, also including period fixed effects. In panel D, we match using eighteen variables observed in period -1: number of plants, number of employees, sales, TFP, distance from the nearest port and railroad station, three sector dummies, foundation year, value of inventory, capital, value of current assets, investments, number of strikes, money spent for worker injuries, money spent for bonuses, number of subsidiaries. In panel E, we match using the same eighteen variables observed in period -1, as well as district fixed effects. In panel F, we match using the same eighteen variables observed in period -1, as well as subdistrict fixed effects. In panel G, we match using the same eighteen variables observed in period -1, as well as subdistrict and application window fixed effects. The coefficients of the PSM regressions are included in Table B3. The distance from the TWI intervention for the nontreated firms is imputed using the distance from the TWI intervention of the first participating firm in the same subdistrict and application window. The sample includes applicant firms that either received only one TWI training or no training at all. The standard errors are clustered at the level of subdistricts and application windows. *** p<0.01, ** p<0.05, * p<0.1.

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Table A8: Effects of TWI Training on Responses to TWI Surveys

	J-I		J-R		J-M	
	Period 0	Period 3	Period 0	Period 3	Period 0	Period 3
	(1)	(2)	(3)	(4)	(5)	(6)
(1) Log machine repairs	-0.089***	-0.357***	0.053***	0.216***	0.053***	0.219***
	(0.001)	(0.006)	(0.001)	(0.004)	(0.001)	(0.004)
(2) Log workers' injuries	0.029***	0.118***	0.125***	0.029***	0.030***	0.121***
	(0.001)	(0.004)	(0.004)	(0.001)	(0.000)	(0.005)
(3) Register causes of breakdown	0.877***	0.877***	-0.019***	-0.018***	-0.020***	-0.016***
	(0.009)	(0.020)	(0.006)	(0.007)	(0.007)	(0.006)
(4) Job description for managers	0.001	0.001	0.876***	0.875***	-0.002	-0.002
	(0.001)	(0.002)	(0.006)	(0.019)	(0.002)	(0.003)
(5) Job description for workers	-0.019***	-0.020**	0.838***	0.826***	-0.015***	-0.014**
	(0.007)	(0.008)	(0.008)	(0.021)	(0.005)	(0.006)
(6) Training for workers	-0.025***	-0.030***	0.875***	0.875***	-0.015***	-0.013**
	(0.007)	(0.009)	(0.008)	(0.017)	(0.005)	(0.006)
(7) Bonus payment scheme	-0.008*	-0.009	0.897***	0.902***	-0.007*	-0.006
	(0.004)	(0.006)	(0.006)	(0.015)	(0.004)	(0.004)
(8) Suggestions from workers	0.001	-0.002	0.563***	0.552***	-0.002	-0.003
	(0.001)	(0.003)	(0.010)	(0.026)	(0.002)	(0.004)
(9) Log unused input	0.039***	0.157***	0.039***	0.158***	-0.089***	-0.348***
	(0.001)	(0.004)	(0.001)	(0.004)	(0.000)	(0.004)
(10) Production planning	-0.027***	-0.032***	-0.018**	-0.019**	0.823***	0.827***
	(0.008)	(0.009)	(0.007)	(0.008)	(0.009)	(0.023)
(11) Marketing	-0.008*	-0.007	-0.002	-0.001	0.840***	0.828***
	(0.004)	(0.006)	(0.002)	(0.003)	(0.008)	(0.020)

Notes. The data used in this table come from the surveys administered by the TWI administration only to firms that received at least one training. The responses were collected before the training, three months after the training, and then each year until 1945. Each row represents a separate regression whose dependent variable is one of the 11 management practices listed in the first column. The estimates are coefficients that measure the difference between each period and the period just before the implementation of the TWI program (period -1), separately for each TWI training. The regressions also include the coefficients for period 1 and 2, the treatment variables in isolation, as well as fixed effects for county-sector pairs, the application window, and the number of days between the opening of the window and the firm application. Three dependent variables are continuous and transformed in logs: the number of machine repairs (1); the number of workers' injuries (2); and the value of unused input in the inventory (9). The other eight variables are dummies equal to 1 if the firm was implementing a given management practice: keeping records of machine breakdowns (3); providing clear list of tasks and expectations to managers (4) and workers (5); offering on-the-job training (6); implementing bonus payment schemes (7); allowing workers to provide suggestions (8); using formal production planning (10); having a formal marketing unit (11). Standard errors are clustered at the level of subdistricts and application windows. *** p<0.01, ** p<0.05, * p<0.1.

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Table A9: Clustering Standard Errors at Subdistrict Level

	Log repairs (1)	Log maintenance (2)	Log injuries (3)	Log bonus (4)	Log strikes (5)	Prob training (6)	Log inventory (7)	Log product lines (8)	Prob marketing (9)
				Panel A: Main results on managerial practices (Section 5.1)					
J-I x Period 1	-0.010***	0.005***	-0.020**	-0.000	0.000	-0.001	-0.010	0.002	-0.001
	(0.000)	(0.000)	(0.010)	(0.000)	(0.000)	(0.002)	(0.012)	(0.003)	(0.001)
J-I x Period 5	-0.033***	0.014***	-0.043***	-0.000	0.006***	-0.051***	0.007	-0.002	-0.028***
	(0.001)	(0.001)	(0.011)	(0.000)	(0.002)	(0.006)	(0.011)	(0.004)	(0.006)
J-I x Period 10	-0.057***	0.025***	-0.064***	0.000	0.030***	-0.062***	0.008	-0.004	-0.064***
	(0.001)	(0.001)	(0.011)	(0.000)	(0.004)	(0.006)	(0.014)	(0.005)	(0.006)
J-R x Period 1	-0.000	0.000	0.004	0.414***	-0.000	0.043***	-0.005	0.002	0.001
	(0.000)	(0.000)	(0.010)	(0.000)	(0.000)	(0.011)	(0.011)	(0.002)	(0.001)
J-R x Period 5	-0.000	0.000	0.011	0.431***	-0.268***	0.628***	0.008	-0.001	-0.023***
	(0.000)	(0.000)	(0.010)	(0.000)	(0.006)	(0.024)	(0.011)	(0.004)	(0.004)
J-R x Period 10	-0.000	-0.000	-0.000	0.459***	-0.268***	0.927***	0.033***	-0.000	-0.061***
	(0.000)	(0.000)	(0.010)	(0.001)	(0.006)	(0.007)	(0.011)	(0.005)	(0.006)
J-M x Period 1	0.000	0.000	-0.001	0.000	0.000	0.001	-0.015***	0.015***	0.043***
	(0.000)	(0.000)	(0.011)	(0.000)	(0.000)	(0.001)	(0.005)	(0.004)	(0.010)
J-M x Period 5	-0.000	0.000	0.001	-0.000	0.007***	-0.038***	-0.071***	0.538***	0.661***
	(0.000)	(0.000)	(0.009)	(0.000)	(0.002)	(0.005)	(0.005)	(0.009)	(0.024)
J-M x Period 10	-0.000	0.000	0.006	-0.000	0.013***	-0.062***	-0.100***	0.606***	0.930***
	(0.000)	(0.000)	(0.009)	(0.000)	(0.002)	(0.006)	(0.007)	(0.009)	(0.008)
				Panel B: Complementarities (Section 5.2)					
J-I x Post	-0.038***	0.014***	-0.037***	-0.002	0.009***	-0.035***	0.009**	0.001	-0.026***
	(0.003)	(0.002)	(0.005)	(0.003)	(0.002)	(0.003)	(0.004)	(0.004)	(0.003)
J-R x Post	-0.001	-0.001	-0.004	0.390***	-0.194***	0.543***	0.011**	0.004	-0.027***
	(0.003)	(0.002)	(0.005)	(0.003)	(0.005)	(0.009)	(0.005)	(0.004)	(0.003)
J-M x Post	-0.004	-0.002	0.000	0.001	0.009***	-0.034***	-0.055***	0.334***	0.549***
	(0.003)	(0.002)	(0.005)	(0.003)	(0.001)	(0.003)	(0.006)	(0.006)	(0.009)
J-I not alone x Post	0.006	-0.013***	0.007	0.002	0.107***	0.015***	-0.011**	0.005	0.014***
	(0.004)	(0.002)	(0.005)	(0.004)	(0.003)	(0.004)	(0.005)	(0.005)	(0.004)
J-R not alone x Post	0.000	-0.007***	0.004	-0.012***	-0.101***	0.026***	-0.006	-0.006	0.011***
	(0.003)	(0.002)	(0.005)	(0.004)	(0.005)	(0.009)	(0.006)	(0.005)	(0.004)
J-M not alone x Post	0.004	0.006***	-0.004	-0.005*	0.107***	0.029***	-0.007	0.066***	0.027***
	(0.003)	(0.002)	(0.006)	(0.003)	(0.003)	(0.004)	(0.006)	(0.006)	(0.009)
				Panel C: Vertical spillovers (Section 6.1)					
J-I x Post	0.018	-0.023	0.012	0.035	0.006	-0.071***	-0.037	-0.026	0.002
	(0.046)	(0.052)	(0.048)	(0.032)	(0.033)	(0.022)	(0.024)	(0.025)	(0.016)
J-R x Post	0.020	-0.073*	-0.006	0.057**	-0.139***	0.466***	-0.002	-0.000	-0.009
	(0.045)	(0.041)	(0.042)	(0.028)	(0.038)	(0.048)	(0.020)	(0.020)	(0.011)
J-M x Post	0.015	0.012	0.007	0.077**	-0.005	-0.025	-0.408***	0.025	0.368***
	(0.037)	(0.043)	(0.039)	(0.037)	(0.024)	(0.030)	(0.074)	(0.018)	(0.045)

Notes: This table shows that the main findings on managerial practices are robust to clustering the standard errors at the subdistrict level. Panel A tests the robustness of the main results on managerial practices described in Section 5.1 and Table 3. Panel B tests the robustness of the results on complementarities described in Section 5.2 and Table 4. Panel C tests the robustness of the results on vertical spillovers described in Section 6.1 and Table 5 (Panel A).

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Table A10: Multiple Hypotheses Testing

	Log repairs (1)	Log maintenance (2)	Log injuries (3)	Log bonus (4)	Log strikes (5)	Prob training (6)	Log inventory (7)	Log product lines (8)	Prob marketing (9)
				Panel A: Main results on managerial practices (Section 5.1)					
J-I x Period 1	0.18	0.18	0.52	0.82	0.84	0.90	0.84	0.84	0.90
J-I x Period 5	<0.01	<0.01	<0.01	0.94	<0.01	<0.01	0.94	0.94	<0.01
J-I x Period 10	<0.01	<0.01	<0.01	0.86	<0.01	<0.01	0.86	0.80	<0.01
J-R x Period 1	0.88	0.88	0.94	0.18	0.90	0.18	0.94	0.94	0.58
J-R x Period 5	0.88	0.88	0.72	<0.01	<0.01	<0.01	0.84	0.88	<0.01
J-R x Period 10	0.88	0.44	0.98	<0.01	<0.01	<0.01	<0.01	0.98	<0.01
J-M x Period 1	1	0.98	1	1	0.90	0.98	0.26	0.24	0.24
J-M x Period 5	0.90	0.76	0.98	0.90	<0.01	<0.01	<0.01	<0.01	<0.01
J-M x Period 10	0.82	0.64	0.82	0.64	<0.01	<0.01	<0.01	<0.01	<0.01
				Panel B: Complementarities (Section 5.2)					
J-I x Post	<0.01	<0.01	<0.01	0.64	<0.01	<0.01	0.08	0.80	<0.01
J-R x Post	0.86	0.80	0.74	<0.01	<0.01	<0.01	0.08	0.74	<0.01
J-M x Post	0.40	0.72	0.96	0.84	<0.01	<0.01	<0.01	<0.01	<0.01
J-I not alone x Post	0.24	<0.01	0.36	0.52	<0.01	<0.01	0.06	0.52	<0.01
J-R not alone x Post	0.86	<0.01	0.68	<0.01	<0.01	<0.01	0.58	0.58	<0.01
J-M not alone x Post	0.52	<0.01	0.52	0.36	<0.01	<0.01	0.52	<0.01	<0.01
				Panel C: Vertical spillovers (Section 6.1)					
J-I x Post	1	1	1	0.86	1	0.02	0.80	0.86	1
J-R x Post	1	0.42	0.92	0.30	<0.01	<0.01	1	1	0.90
J-M x Post	1	1	1	0.20	1	0.90	<0.01	0.54	<0.01

Notes: This table shows p-values adjusted for multiple concurrent hypotheses tests using the Westfall-Young methodology ("Resampling-based Multiple Testing: Examples and Methods for p-value Adjustment." by Westfall and Young, 1993). The table uses the Stata command `wyoung`. Panel A tests the robustness of the main results on managerial practices described in Section 5.1 and Table 3. Panel B tests the robustness of the results on complementarities described in Section 5.2 and Table 4. Panel C tests the robustness of the results on vertical spillovers described in Section 6.1 and Table 5 (Panel A).

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Table A11: Complementarity Effects, Alternative Specification 1

	Log repairs (1)	Log maintenance (2)	Log injuries (3)	Log bonus (4)	Log strikes (5)	Prob training (6)	Log inventory (7)	Log product lines (8)	Prob marketing (9)
J-I x Post	-0.037***	0.014***	-0.037***	-0.001	0.008***	-0.038***	0.009**	-0.000	-0.025***
	(0.003)	(0.002)	(0.005)	(0.003)	(0.002)	(0.003)	(0.004)	(0.004)	(0.003)
J-R x Post	-0.000	-0.001	-0.003	0.390***	-0.195***	0.540***	0.011***	0.002	-0.026***
	(0.003)	(0.002)	(0.005)	(0.003)	(0.004)	(0.008)	(0.004)	(0.004)	(0.003)
J-M x Post	-0.004	-0.001	0.001	0.002	0.008***	-0.038***	-0.055***	0.332***	0.550***
	(0.003)	(0.002)	(0.005)	(0.003)	(0.001)	(0.003)	(0.006)	(0.006)	(0.008)
J-I and J-R x Post	-0.031***	-0.005***	-0.028***	0.380***	-0.183***	0.538***	0.004	-0.002	-0.025***
	(0.002)	(0.001)	(0.003)	(0.002)	(0.003)	(0.006)	(0.003)	(0.002)	(0.002)
J-R and J-M x Post	-0.000	-0.002	-0.002	0.376***	-0.183***	0.552***	-0.056***	0.392***	0.563***
	(0.002)	(0.001)	(0.003)	(0.002)	(0.003)	(0.005)	(0.004)	(0.004)	(0.005)
J-M and J-I x Post	-0.032***	0.007***	-0.032***	-0.001	0.228***	-0.037***	-0.064***	0.400***	0.567***
	(0.002)	(0.001)	(0.003)	(0.002)	(0.003)	(0.003)	(0.004)	(0.004)	(0.005)
All three x Post	-0.033***	-0.006***	-0.036***	0.369***	-0.055***	0.568***	-0.059***	0.414***	0.544***
	(0.002)	(0.001)	(0.003)	(0.003)	(0.004)	(0.008)	(0.005)	(0.006)	(0.007)
Observations	134,288	134,288	134,288	134,288	134,288	134,288	134,288	134,288	134,288
R^2	0.102	0.098	0.101	0.210	0.177	0.616	0.395	0.552	0.627

Notes: This table shows the coefficients of several dummies for each possible combination of the TWI training. For example, *J-I* is equal to one for firms that received only the J-I module, while *J-I and J-R* is equal to one for firms that received only the J-I and J-R modules. All the dependent variables are logged with the exception of two dummy variables that measure whether firms reported expenditures for on-the-job training (column 6; mean=0.18) or for marketing activities (column 9; mean=0.17). The regressions also include the training variables in isolation, as well as fixed effects for county-sector-period combinations, the application window, and the number of days between the opening of the window and the firm application. Standard errors are clustered at the level of subdistricts and application windows. *** p<0.01, ** p<0.05, * p<0.1.

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Table A12: Complementarity Effects, Alternative Specification 2

	Log repairs (1)	Log maintenance (2)	Log injuries (3)	Log bonus (4)	Log strikes (5)	Prob training (6)	Log inventory (7)	Log product lines (8)	Prob marketing (9)
J-I x Post	-0.034***	0.012***	-0.034***	-0.002	0.031***	-0.033***	0.003	0.010***	-0.010**
	(0.003)	(0.002)	(0.004)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)
J-R x Post	0.003	-0.002	0.000	0.389***	-0.172***	0.545***	0.006	0.012***	-0.011***
	(0.003)	(0.002)	(0.004)	(0.003)	(0.004)	(0.007)	(0.004)	(0.004)	(0.004)
J-M x Post	-0.002	-0.003	0.004	0.001	0.029***	-0.033***	-0.060***	0.342***	0.564***
	(0.003)	(0.002)	(0.004)	(0.002)	(0.002)	(0.004)	(0.005)	(0.005)	(0.007)
J-I x J-R x Post	-0.000	-0.015***	0.005	-0.006*	-0.047***	0.025***	-0.004	-0.026***	-0.007
	(0.003)	(0.002)	(0.005)	(0.003)	(0.004)	(0.007)	(0.005)	(0.006)	(0.007)
J-R x J-M x Post	-0.002	0.003*	-0.006	-0.014***	-0.046***	0.039***	-0.001	0.036***	0.007
	(0.003)	(0.002)	(0.005)	(0.003)	(0.004)	(0.007)	(0.005)	(0.005)	(0.006)
J-M x J-I x Post	0.003	-0.002	-0.003	0.001	0.162***	0.028***	-0.006	0.046***	0.010
	(0.003)	(0.002)	(0.005)	(0.003)	(0.004)	(0.007)	(0.006)	(0.006)	(0.007)
Observations	134,288	134,288	134,288	134,288	134,288	134,288	134,288	134,288	134,288
R^2	0.101	0.098	0.101	0.210	0.177	0.615	0.395	0.552	0.627

Notes: This table shows the coefficients of several dummies for each type of TWI training, as well as their interaction. J-x is one for all firms that received the J-x training. For example, J-I is equal to one for firms that received only the J-I module, as well as for firms that received the J-I and J-R modules. All the dependent variables are logged with the exception of two dummy variables that measure whether firms reported expenditures for on-the-job training (column 6; mean=0.18) or for marketing activities (column 9; mean=0.17). The regressions also include the training variables in isolation, as well as fixed effects for county-sector-period combinations, the application window, and the number of days between the opening of the window and the firm application. The sample includes all applicant firms. Standard errors are clustered at the level of subdistricts and application windows. *** p<0.01, ** p<0.05, * p<0.1.

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Table A13: Effects on Upstream and Downstream Firms, Heterogeneity Analysis

	Log repairs (1)	Log maintenance (2)	Log injuries (3)	Log bonus (4)	Log strikes (5)	Prob training (6)	Log inventory (7)	Log product lines (8)	Prob marketing (9)
Panel A: Heterogeneity by sector of trained firms									
J-I x Post	0.082	-0.094	0.099	-0.048	-0.060	-0.071	-0.064***	0.031	-0.015
	(0.076)	(0.076)	(0.070)	(0.062)	(0.091)	(0.056)	(0.016)	(0.031)	(0.009)
J-R x Post	-0.023	-0.080	0.047	0.062	-0.117***	0.527***	-0.091***	-0.080*	-0.030
	(0.058)	(0.106)	(0.080)	(0.055)	(0.028)	(0.162)	(0.021)	(0.042)	(0.030)
J-M x Post	-0.036	-0.106	-0.070**	-0.055	0.019	-0.103	-0.295***	-0.076**	0.135***
	(0.025)	(0.066)	(0.031)	(0.138)	(0.121)	(0.098)	(0.069)	(0.036)	(0.045)
J-I x Post x Manufacturing	-0.056	0.074	-0.066	0.080	0.096	0.052	0.030	-0.038	0.039
	(0.079)	(0.083)	(0.074)	(0.069)	(0.094)	(0.062)	(0.023)	(0.036)	(0.025)
J-R x Post x Manufacturing	0.046	0.034	-0.056	-0.050	0.004	-0.106	0.102***	0.082*	0.003
	(0.064)	(0.112)	(0.084)	(0.062)	(0.038)	(0.164)	(0.024)	(0.045)	(0.039)
J-M x Post x Manufacturing	0.059*	0.154**	0.082**	0.042	0.002	0.054	0.026	0.101***	0.195***
	(0.033)	(0.073)	(0.039)	(0.141)	(0.122)	(0.102)	(0.086)	(0.037)	(0.062)
Panel B: Heterogeneity by size of trained firms									
J-I x Post	0.047	-0.062	0.044	0.009	0.062*	-0.035	-0.053***	-0.023	0.010
	(0.034)	(0.053)	(0.037)	(0.037)	(0.036)	(0.037)	(0.009)	(0.022)	(0.021)
J-R x Post	0.058	-0.059	0.029	-0.004	-0.152***	0.493***	-0.000	-0.013	-0.017
	(0.039)	(0.061)	(0.039)	(0.034)	(0.038)	(0.044)	(0.011)	(0.022)	(0.025)
J-M x Post	0.030	0.050	0.020	-0.005	0.039	-0.039	-0.220***	0.021	0.326***
	(0.033)	(0.067)	(0.041)	(0.047)	(0.030)	(0.025)	(0.057)	(0.019)	(0.054)
J-I x Post x Above-median workforce	-0.031	0.067	-0.012	0.029	-0.064	0.020	0.031	0.036	0.014
	(0.047)	(0.072)	(0.049)	(0.052)	(0.048)	(0.047)	(0.027)	(0.029)	(0.038)
J-R x Post x Above-median workforce	-0.064	0.017	-0.061	0.033	0.067	-0.113*	0.011	0.021	-0.016
	(0.050)	(0.076)	(0.048)	(0.047)	(0.046)	(0.067)	(0.019)	(0.028)	(0.039)
J-M x Post x Above-median workforce	-0.017	-0.018	-0.020	-0.015	-0.026	-0.013	-0.077	0.005	-0.006
	(0.044)	(0.080)	(0.052)	(0.054)	(0.040)	(0.043)	(0.092)	(0.023)	(0.065)
Panel C: Heterogeneity by location of trained firms									
J-I x Post	0.028	0.001	0.030	0.038	0.040	-0.031	-0.037**	-0.004	0.011
	(0.035)	(0.036)	(0.034)	(0.026)	(0.026)	(0.030)	(0.019)	(0.020)	(0.018)
J-R x Post	0.033	-0.047	-0.004	0.032	-0.114***	0.427***	0.006	-0.009	-0.011
	(0.028)	(0.049)	(0.029)	(0.036)	(0.032)	(0.056)	(0.015)	(0.020)	(0.018)
J-M x Post	0.027	0.057	0.018	-0.041	0.009	-0.004	-0.272***	0.025*	0.385***
	(0.033)	(0.058)	(0.035)	(0.034)	(0.023)	(0.024)	(0.071)	(0.014)	(0.045)
J-I x Post x Midwest	0.051	-0.136	0.144**	-0.102**	-0.071	0.014	-0.007	0.002	-0.030
	(0.056)	(0.112)	(0.059)	(0.048)	(0.073)	(0.072)	(0.023)	(0.032)	(0.053)
J-I x Post x South	-0.121*	0.044	-0.190**	0.027	-0.011	0.057	0.021	0.002	0.094**
	(0.062)	(0.065)	(0.081)	(0.060)	(0.083)	(0.040)	(0.025)	(0.042)	(0.047)
J-I x Post x West	0.072	-0.155	0.046	-0.060	-0.008	-0.023	0.003	0.013	0.165
	(0.054)	(0.152)	(0.075)	(0.166)	(0.045)	(0.048)	(0.034)	(0.039)	(0.172)
J-R x Post x Midwest	0.065	-0.043	0.082	-0.027	0.024	-0.064	0.035	0.004	0.034
	(0.074)	(0.117)	(0.073)	(0.069)	(0.057)	(0.090)	(0.024)	(0.027)	(0.037)
J-R x Post x South	-0.044	0.120	0.009	-0.083	0.011	0.213***	-0.061	-0.074	-0.040
	(0.114)	(0.140)	(0.090)	(0.118)	(0.075)	(0.062)	(0.066)	(0.067)	(0.068)
J-R x Post x West	-0.139***	0.023	-0.116***	-0.041	-0.020	0.022	-0.013	0.052*	-0.166*
	(0.038)	(0.077)	(0.044)	(0.072)	(0.050)	(0.074)	(0.018)	(0.027)	(0.100)
J-M x Post x Midwest	-0.056	-0.014	-0.056	0.064	-0.003	-0.089**	-0.059	-0.022	-0.063
	(0.048)	(0.099)	(0.049)	(0.064)	(0.042)	(0.044)	(0.137)	(0.023)	(0.067)
J-M x Post x South	0.005	-0.066	-0.001	0.017	0.053	0.009	0.031	-0.055	-0.237***
	(0.051)	(0.108)	(0.060)	(0.100)	(0.069)	(0.028)	(0.127)	(0.057)	(0.077)
J-M x Post x West	0.037	-0.048	0.020	0.104	0.077	-0.223**	0.113	0.036	-0.246
	(0.057)	(0.082)	(0.062)	(0.070)	(0.061)	(0.106)	(0.124)	(0.032)	(0.223)

Notes: The sample used for this table includes 1,816 upstream and downstream firms linked to 1,572 firms that applied to the TWI program. Panel A tests whether there are heterogeneous effects based on the sector of the trained firms. Panel B tests whether there are heterogeneous effects based on the workforce size of the trained firms in period -1. Panel C tests whether there are heterogeneous effects based on the location (U.S. Census Bureau region) of the trained firms. These regressions also include the interaction between the training variable and the "heterogeneity dummies," the interaction between the period fixed effects and the "heterogeneity dummies," the training variables by themselves, the "heterogeneity dummies" by themselves, as well as fixed effects for county-sector-period combinations, the application window of the applicant firm, and the number of days between the opening of the window and the firm application. Standard errors are clustered at the level of subdistricts and application windows. *** p<0.01, ** p<0.05, * p<0.1.

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Table A14: Selection of Firms Entering the Applicants' Supply Chain

	Log sales	TFP	Log ROA	Log plants	Log employees	Log managers	Log subsidiaries
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
TWI	0.017***	0.193***	-0.018	0.099***	0.099***	0.111***	0.107***
	(0.001)	(0.006)	(0.033)	(0.012)	(0.009)	(0.027)	(0.011)
Observations	686	686	686	686	686	686	686
R^2	0.533	0.738	0.120	0.266	0.337	0.148	0.287

Notes. This table shows cross-sectional correlations between the characteristics of upstream and downstream firms joining the supply chain of TWI applicants after the TWI program and the training variable. The only period considered is -1, the year before the entry in the supply chain of applicant firms. The sample includes 715 upstream and downstream firms that entered the supply chain of 660 TWI applicants only after the TWI program. The regressions also include fixed effects for district-sector combinations, the application window, and the number of days between the opening of the window and the firm application. Standard errors are clustered at the level of subdistricts and application windows. *** p<0.01, ** p<0.05, * p<0.1.

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Table A15: Summary Statistics for 11,536 Nonapplicant War Contractors

	Nonapplicant firms				Difference with	Difference with
	Mean	St. Dev.	Min	Max	applicants	matched applicants
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Data from annual financial statements in 1939						
Plants	2.61	0.73	1	4	-3.47	-0.60
Employees	618.26	98.90	265	970	-420.06	-63.98
Foundation year	1923	2.03	1916	1930	-8.01	-8.09
Agriculture	0.03	0.17	0	1	0.01	-0.01
Manufacturing	0.86	0.35	0	1	-0.01	-0.01
Transportation	0.09	0.29	0	1	0.01	0.01
Services	0.02	0.15	0	1	0.01	0.01
Sales	90.00	0.01	89.95	90.05	-101.78	-52.94
Current assets	1.18	0.29	0.66	1.74	-17.22	-12.39
Total assets	3.64	0.35	2.95	4.39	-60.81	-43.85
TFP	4.09	0.37	3.30	4.74	0.22	0.05
ROA	0.07	0.01	0.05	0.09	0.04	0.04
Inventory	0.54	0.07	0.28	0.84	-14.83	-10.75
Injuries	0.88	0.24	0.44	1.62	-9.52	-6.88
Repairs	1.35	0.26	0.90	1.80	-14.02	-10.09
Bonus payments	2.25	0.78	0.90	3.60	-6.02	-3.95
Panel B: Workforce data from replacement lists in 1941						
Share African-Americans	0.05	0.01	0.04	0.07	-0.01	-0.01
Share women	0.04	0.01	0.03	0.05	-0.01	-0.01
Years of education	7	1.05	3	11	-1.51	-1.53
Age of workforce	23.02	5.02	4	42	-5.96	-5.90
Panel C: WWII-related data from replacement lists and war contracts						
Share drafted employees (1942-1945)	0.20	0.09	0	0.35	-0.03	0.01
Switched 3-digit SIC (1940-1945)	1	0	1	1	0	0
Switched 2-digit SIC (1940-1945)	0.54	0.50	0	1	-0.02	-0.05
Switched 1-digit SIC (1940-1945)	0.35	0.48	0	1	-0.02	-0.04
Number of contracts (1940-1945)	1.90	7.30	0	123	1.22	1.21
Value of contracts (1940-1945)	18.26	250.76	0	38,771	-6.85	-9.59

Notes. Summary statistics for 11,536 firms that applied to the TWI program and for which we found financial data (out of 13,818 total nonapplicants). Column 5 shows the average difference with respect to all applicants. Column 6 shows the average difference with respect to 2,223 applicants that were matched to nonapplicants. The matching was based on propensity scores, using a nearest-neighbor algorithm without replacement. The variables used for the matching were the number of plants and employees in 1939, TFP in 1939, distance from the nearest port and railroad station, sector, and fixed effects for the 22 TWI districts. A description of the variables is available under Table 1 and in Appendix B.

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Table A16: Spillover of Practices to Nonapplicant Firms

	Log repairs (1)	Log maintenance (2)	Log injuries (3)	Log bonus (4)	Log strikes (5)	Prob training (6)	Log inventory (7)	Log product lines (8)	Prob marketing (9)
				Panel A: Number of nearby applicants					
Trained, same sector x Post	0.0000	-0.0001	-0.0000	-0.0001	-0.0001	-0.0000	-0.0000	-0.0001	-0.0000
	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0001)	(0.0001)	(0.0000)	(0.0001)	(0.0001)
Trained, diff. sector x Post	0.0001	0.0002*	0.0000	-0.0000	0.0003	-0.0002	-0.0000	0.0001	-0.0002
	(0.0002)	(0.0001)	(0.0003)	(0.0004)	(0.0002)	(0.0002)	(0.0000)	(0.0001)	(0.0002)
Nontrained, same sector x Post	-0.0001	0.0001	-0.0001	0.0000	0.0001	0.0001	0.0000	0.0001	0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0001)	(0.0001)	(0.0000)	(0.0001)	(0.0001)
Nontrained, diff. sector x Post	-0.0002	-0.0002*	-0.0001	-0.0000	-0.0004	0.0003	0.0000	-0.0001	0.0002
	(0.0002)	(0.0001)	(0.0003)	(0.0004)	(0.0003)	(0.0003)	(0.0000)	(0.0001)	(0.0002)
Observations	126,875	126,875	126,875	126,875	126,875	126,875	126,875	126,875	126,875
				Panel B: Distance to nearby applicants					
Trained, same sector x Post	0.0000	-0.0000	0.0000	-0.0001	0.0001	0.0000	0.0000	0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0001)	(0.0001)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Trained, diff. sector x Post	0.0000	0.0000	0.0000	-0.0000	0.0000	-0.0001	0.0000	-0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0001)	(0.0001)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0001)
Nontrained, same sector x Post	-0.0000	0.0000	-0.0000	0.0000	-0.0001**	-0.0001	0.0000	-0.0000	0.0001
	(0.0000)	(0.0000)	(0.0001)	(0.0001)	(0.0000)	(0.0001)	(0.0000)	(0.0000)	(0.0001)
Nontrained, diff. sector x Post	-0.0000	0.0000	-0.0000	0.0001	0.0000	0.0001**	-0.0000	-0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0001)	(0.0001)	(0.0001)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Observations	125,885	125,885	125,885	125,885	125,885	125,885	125,885	125,885	125,885

Notes: The sample used for these graphs includes 11,536 war contractors that did not apply to the TWI program and for which we found financial statements (out of 13,818 total nonapplicants). In panel A, the coefficients shown are the interactions between the log number of applicants in the area and a post-TWI dummy. The number of applicants is divided between trained and nontrained firms and between firms in the same or different sector (agriculture, manufacturing, transportation, or services). Panel B uses the log of the average distance from applicant firms, instead of the log number of firms. In order to compute the number of nearby applicant firms and their average distance to nonapplicant firms, we divided the 364 subdistricts into 52 groups of 7 adjacent subdistricts. Period 0 coincides with the modal treatment year within each of the 52 groups of subdistricts. All regressions also include firm fixed effects. The standard errors are clustered at the subdistrict level. *** p<0.01, ** p<0.05, * p<0.1.

Table A17: Adoption of Practices and Managers Leaving

	Log repairs (1)	Log maintenance (2)	Log injuries (3)	Log bonus (4)	Log strikes (5)	Prob training (6)	Log inventory (7)	Log product lines (8)	Prob marketing (9)
J-I x Post	-0.040***	0.013***	-0.040***	0.001	0.010***	-0.037***	0.012**	0.004	-0.027***
	(0.004)	(0.003)	(0.007)	(0.005)	(0.002)	(0.005)	(0.006)	(0.006)	(0.004)
J-R x Post	0.002	-0.000	0.002	0.385***	-0.197***	0.547***	0.015**	0.006	-0.021***
	(0.005)	(0.003)	(0.006)	(0.005)	(0.005)	(0.013)	(0.006)	(0.006)	(0.003)
J-M x Post	-0.002	0.001	0.003	0.000	0.007***	-0.036***	-0.056***	0.341***	0.559***
	(0.004)	(0.002)	(0.006)	(0.004)	(0.002)	(0.004)	(0.008)	(0.008)	(0.011)
J-I x Post x Median leaving	0.008	0.001	0.007	-0.006	-0.001	0.000	-0.005	-0.007	-0.002
	(0.007)	(0.004)	(0.010)	(0.007)	(0.003)	(0.007)	(0.008)	(0.008)	(0.006)
J-R x Post x Median leaving	-0.006	-0.002	-0.010	0.009	0.005	-0.016	-0.005	-0.010	-0.006
	(0.007)	(0.004)	(0.009)	(0.007)	(0.009)	(0.018)	(0.008)	(0.008)	(0.005)
J-M x Post x Median leaving	-0.005	-0.005	-0.005	0.003	-0.001	0.003	-0.000	-0.018	-0.019
	(0.006)	(0.004)	(0.010)	(0.006)	(0.003)	(0.006)	(0.011)	(0.011)	(0.018)
Observations	67,472	67,472	67,472	67,472	67,472	67,472	67,472	67,472	67,472
R^2	0.142	0.132	0.141	0.168	0.160	0.436	0.406	0.342	0.496

Notes: *Median leaving* is equal to 1 for firms with an above-median (52 percent) share of top executives leaving the company between the end of training and 1955. To compute this variable, we compare the list of top executives in 1955 (or last year in which a firm is observed) to the list of top executives in period 0, the year of the TWI training. These regressions also include the interaction between the training variable and *Median leaving*, the interaction between the period fixed effects and *Median leaving*, the training variables by themselves, *Median leaving* by itself, as well as fixed effects for county-sector-period combinations, the application window of the applicant firm, and the number of days between the opening of the window and the firm application. Standard errors are clustered at the level of subdistricts and application windows. *** p<0.01, ** p<0.05, * p<0.1.

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Table A18: Relationship with the Government

	Has contracts	Value contracts	Number contracts	Above-median value	Top-tertile value
	(1)	(2)	(3)	(4)	(5)
			Panel A: War contract data between -3 and +2		
TWI x Post	0.015	0.346	0.027	0.022	0.007
	(0.018)	(0.292)	(0.021)	(0.017)	(0.016)
Observations	24,805	20,741	20,741	20,741	20,741
R^2	0.176	0.170	0.167	0.166	0.151
			Panel B: War contract data between -4 and +2		
TWI x Post	0.013	0.283	0.023	0.017	0.005
	(0.017)	(0.288)	(0.021)	(0.017)	(0.016)
Observations	27,186	23,122	23,122	23,122	23,122
R^2	0.185	0.191	0.186	0.186	0.158
			Panel C: War contract data between -5 and +2		
TWI x Post	0.012	0.271	0.022	0.016	0.005
	(0.017)	(0.285)	(0.020)	(0.017)	(0.016)
Observations	28,353	24,289	24,289	24,289	24,289
R^2	0.193	0.203	0.197	0.197	0.164

Panel D: Postwar and cross-sectional variables

	Postwar refunds	Supply combat	Supply other	Projects industrial	Projects military
	(1)	(2)	(3)	(4)	(5)
TWI	-0.000	0.117	0.057	0.055	-0.246
	(0.000)	(0.171)	(0.073)	(0.198)	(0.231)
Observations	20,388	4,601	4,601	4,601	4,601
R^2	0.131	0.607	0.687	0.583	0.637

Notes. *Has contracts* is a dummy equal to one for firms with at least one new contract in a given year. *Number contracts* and *Value contracts* are the inverse hyperbolic sine function (preferable over logs due to zeros) of the number and value of war contracts granted to each firm per year. *Above-median value* is a dummy equal to one for firms above the median of values of war contracts in each year. *Top-tertile value* is a dummy equal to one for firms in the top tertile of values of war contracts in each year. These variables come from war contracts data and are therefore available only between 1940 and 1945. The number of firms with nonmissing values is 3,974 in period -5, 7,332 in period -4, 10,607 in period -3, 11,545 in period -2, 11,567 in period -1, 11,575 in period 0, 7,601 in period 1, and 4,243 in period 2. *Postwar Refunds* is the log of subsidies given by the government to war contractors to switch from military to civilian production after World War II. They are available only from 1946 to 1951. Therefore, we need to estimate a single-difference specification, instead of the usual difference-in-differences event study. All regressions also include fixed effects for county-sector-period combinations, the application window, and the number of days between the opening of the window and the firm application. In Panel D, columns 2 to 5 have dependent variables that measure the total value of war-related government spending between 1940 and 1945 in the county of each applicant firm. *Supply combat* is the inverse hyperbolic sine function of the total value of supply contracts for combat equipment, while *Supply combat* is the inverse hyperbolic sine function of the total value of supply contracts for noncombat equipment. *Projects industrial* is the inverse hyperbolic sine function of the total value of projects for the construction of industrial facilities, while *Projects military* is the inverse hyperbolic sine function of the total value *of* projects for the construction of military facilities. These regressions also include fixed effects for subdistrict-sector combinations, the application window, and the number of days between the opening of the window and the firm application. The data come from `https://www.icpsr.umich.edu/web/ICPSR/studies/02896/variables?q=war`. Standard errors are clustered at the level of subdistricts and application windows. *** p<0.01, ** p<0.05, * p<0.1.

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B Data Collection and Variable Construction

Data Collection

The data collection targeted firms eligible to apply to the TWI program. In order to apply, firms had to be located in the United States and needed to win at least one war contract between June 1940 and August 1945. To identify the eligible companies, we used the tabulation of war supply contracts published by the Civilian Production Administration in 1946, which Dmitri Koustas digitized and kindly shared with us. This dataset includes information on all contracts for war supplies worth at least $50,000 and awarded between June, 1940 and September, 1945. The minimum threshold at $50,000 in 1945 USD or $710,000 in 2020 USD (https://www.measuringworth.com/calculators/uscompare/) is unlikely to be binding for the type of war contracts received by applicant firms. If we consider the distribution of the average value of war contracts received by the firms in our sample, the median is equal to $4.2 million (2020 USD), while the mean is equal to $56.5 million (2020 USD). Out of 25,627 companies with at least one contract in these five years, we excluded 234 firms located outside the United States, obtaining a list of 25,393 companies eligible to participate in the TWI program.[33] We then constructed a panel dataset gathering four different types of data.

TWI Monthly Program Development Reports (1940-1945). We retrieved and digitized the list of applicant firms from the monthly program development reports compiled by the TWI administration between August 22, 1940 and September 19, 1945. These reports are stored at the National Archives and Record Administration (Record Group 211, "Records of the War Manpower Commission [WMC]," 1936-1947, College Park, MD). Out of 25,393 eligible firms, we were able to find applications from 11,575 companies.[34] For each application, the monthly records indicate the application date, the district and subdistrict in which the applicant firm was located, whether it eventually received the TWI training, in which of the J-modules it was trained, and the year in which each module was delivered. Moreover, we also retrieved and digitized the list of the instructors trained by the TWI service who delivered the J-modules to participant firms. For each instructor, we know their full name, whether they were employed by the government before the TWI program, whether they were hired full time or part-time, in which specific J-module they were trained, and to which subdistrict they were assigned. In total, the TWI instructors were 48,424.

Plant-level Surveys (1940-1945). In order to test the effectiveness of the program, the TWI administration conducted plant-level surveys in the firms that received the TWI training. Specifically, the surveys—stored at the National Archives and Record Administration (Record Group 211, "Records of the War Manpower Commission [WMC]," 1936-1947, College Park, MD)—indicate whether a plant was performing each of eleven managerial practices linked to the teachings of the TWI program. The plan managers were interviewed before the start of each J-module training, three months after the TWI training, and then each year thereafter until 1945. Overall, this dataset contain information about 38,241 surveyed establishments. We digitized these data and then we matched them to the list of applicant firms using name, municipality and state in which the firm's headquarters were located.

Replacement Schedules (1942-1945). After the Executive Order 9279 of December 5, 1942, firms in which at least one worker was drafted had to submit a replacement schedule to their regional Bureau of Manpower Utilization. In the schedules—stored at National Archives and Record Administration (Record Group 211, "Records of the War Manpower Commission [WMC]," 1936-1947, College Park, MD)—, firms provided a description of their products, as well as a list of firms they were selling to and buying from. Moreover, they reported the composition of their labor force, specifically indicating the share of African-American workers

[33] These companies, which were granted 772 contracts in total, were located in: Arabia (1), Argentina (22), Australia (4), Belgium (1), Bermuda (5), Brazil (5), British West Indies (6), Canada (123), Chile (3), China (2), Congo (1), Cuba (6), Denmark (1), Dominican Republic (2), Ecuador (1), Finland (1), India (5), Iran (1), Malaysia (1), Mexico, (9) Nicaragua (3), Panama (6), Peru (2), Philippines (3), Switzerland (8), Thailand (1), UK (7), and Venezuela (4).

[34] As noted in Brunet (2019), firms may appear in contract listings with numerous locations, which in some cases makes unclear whether there are multiple firms with the same name or one firm with multiple facilities. We solve this ambiguity by checking how firms were listed in the TWI reports. Specifically, if we found two firms with the same name but in different locations listed as two separate entities receiving the TWI service, we consider them as two separate firms.

and women, as well as the average years of education and age of all their employees. Finally, they had to list the names of drafted employees, their job titles, their relative ranking within the firm hierarchy, their age, their current Selective Service classification, their family status, their local board identity, and their draft order number, as well as the time needed to replace them with new workers (hence, then name "replacement schedules"). Through these replacement schedules, employers could also ask for exemptions from the draft for some categories of their workers. According to the Selective Training and Service Act of 1940, men between the ages of 18 and 45 were classified into four categories: (1) men available for training and service; (2) men deferred because of occupational status; (3) men deferred because of dependents; (4) men deferred by law or who were unfit for service. The Selective Service System, operating at a decentralized level through its 6,443 local boards, processed the exemption requests, mostly based on the information given by the draftees at the time of registering. Managers were usually deferred "in support of national health, safety, or interest" (category II-A). While the replacement schedules started being submitted in 1942, the first schedule contained data on both 1941 and 1942. Using firm name, municipality, and state, we searched for firms eligible for the TWI program in the replacement lists. Given the large size of war contractors, all of them had at least one worker drafted between 1940 and 1945. Therefore, we were able to match all applicant firms to the newly digitized dataset of replacement schedules.

Firm Performance (1935-1955). We retrieved information on the economic outcomes of U.S. war contractors from their balance sheets and income statements. To do so, we relied on the "Historical Annual Reports" collection of the Mergent Archives, which is composed of more than one million corporate financial statements collected directly from company archives, universities, libraries, and private collections.[35] In Summer 2016, we accessed the data through the subscription of the University of California–Irvine. Specifically, we searched the UCI library's search engine for the name, municipality and state of each U.S. war contractor, collecting any document published between 1935 and 1955. For each firm and year found, we were able to download the annual financial reports a single pdf page at time after inserting a verification code for each downloaded page. If we did not find a firm before its first U.S. war contract, we used the foundation date to determine if this was due to a missing statement or if the firm had not been founded yet. If we stopped finding a firm after its last U.S. war contract, we assumed that the firm had exited the market. We were able to find at least one match for all the 11,575 applicants firms and for 11,536 out of 13,857 (83 percent) nonapplicants. We believe that the lower matching rate among nonapplicants is likely due to the smaller size. Even though there is not a formal threshold on firm size to be included in the Mergent Archives, in practice, publicly traded firms, firms issuing bonds, and larger firms are more likely to be included because it is relatively easier to find their balance sheets.

Variables Construction and Definition

In Table B1, we provide a list of all the variables used in the paper with their definitions and data sources. When needed, we also provide additional details on the variable construction. All the monetary values have been reevaluated to 2020 USD using https://www.measuringworth.com/calculators/uscompare/.

Definition of Sector and Identification of Firms in the Supply Chain

The annual financial reports do not include information on a firm's sector. To retrieve this piece of information, we rely on the replacement schedules. In fact, firms had to report the products not covered by a war contract for the year 1941, the year before the draft started. We therefore classify these products using the Standard Industrial Classification (SIC) created for the first time in U.S. history in 1939 for the manufacturing products and in 1940 for the non-manufacturing products at 1-, 2-, and 3-digit levels.[36] Specifically, we find the classification of manufacturing products in Volume I, part 3—"Alphabetic Index of Products, Establishments and Processes, 1939," and the classification of the products in Volume II, Part 3—"Alphabetic Index of Products, Establishments, and Services, 1940," published by the U.S. Office of Management and Budget in 1941 under the title of "Standard Industrial Classification Manual."

We then use these classifications to obtain the 1-, 2-, and 3-digit SIC codes of each firm's war products. We use this information to construct three variables: *Switched 3-digit SIC*, an indicator that equals to 1 for firms in which at least one war product had a different 3-digit SIC code than the peacetime products listed in 1941;

[35] https://www.ftserussell.com/data/mergent-archives.

[36] While the SIC categorizes products up to 4 digits, the product description is not accurate enough for such a detailed classification.

Switched 2-digit SIC, an indicator that equals to 1 for firms in which at least one war product had a different 2-digit SIC code than the peacetime products listed in 1941; *Switched 1-digit SIC*, an indicator that equals to 1 for firms in which at least one war product had a different 1-digit SIC code than the peacetime products listed in 1941.

In the replacement schedules, firms also had to indicate the name of the companies with which they had an existing contract, as well as the list of products bought from and sold to them. We use this information to construct a list of upstream and downstream firms for the U.S. war contractors. First, we use the SIC codes to classify the 2-digit industry of the products sold to and bought from these companies. Then, we use the 1947 input-output tables to assess whether these products were upstream and downstream, relative to the products of the U.S. war contractor.[37] To avoid any possible ambiguity, we keep only firms for which all the products had the same 2-digit industry. Out of 3,465 companies listed in the replacement schedules, we exclude 341 firms. Out of the remaining 3,124 firms, we were able to find financial statements for 1,816 of them, which represent the sample we use for the analysis in Section 6.1.

Estimation of TFP

We specify a Cobb-Douglas revenue production function for each 2-digit sector s, as follows:

$$r_{it} = a_{it} + \beta_l^s l_{it} + \beta_k^s k_{it} + \beta_m^s m_{it} + \epsilon_{it}, \tag{2}$$

where all the lowercase variables are in logs, r_{it} is operating revenues of firm i in year t, a_{it} denotes TFP, l_{it} is the number of employees, k_{it} is capital stock, m_{it} are intermediate inputs expenditures (raw materials and services), and ϵ_{it} is the error. Table B1 contains the definition of these variables.

We estimate equation (2) using the methodology proposed by Gandhi, Navarro, and Rivers (2020) (GNR), which develops a nonparametric estimation of gross-output production functions that employs a "proxy variable" in a similar vein as prior work by Olley and Pakes (1996) (OP) and Levinsohn and Petrin (2003) (LP). More specifically, the GNR methodology consists in regressing revenue shares on inputs to identify the flexible input elasticity, first solving the partial differential equation and then integrating it into the dynamic panel/proxy variable structure to identify the remainder of the production function. Therefore, this procedure leads to a two-step nonparametric estimator in which different components of the production function are estimated via polynomial series in each stage.

The estimated factor coefficients for each 2-digit sector are reported in Table B2. In this table, we compare the coefficients estimated with the GNR methodology to the coefficients obtained from the LP and OP methodologies. Both LP and OP tend to overestimate the labor coefficients and underestimate the coefficients of capital and intermediate goods. This result is well-known in the literature (for example, Ackerberg, Caves, and Frazer, 2015) and stems from the fact that the labor coefficient is not identified in the first stage of OP and LP. Conversely, the OLS results substantially overestimate the output elasticity of intermediate inputs and underestimate both the capital and labor coefficients in every sector, confirming the severity of the transmission bias (as discussed by Gandhi, Navarro, and Rivers, 2020). Finally, it is worth noting that the GNR estimates are roughly comparable to the expenditure shares of intermediate goods, labor, and capital.

In summary, we use the sector-specific GNR coefficients to create the measure of TFP for each firm and year that we employ in the main analysis. However, our results do not hinge on using the GNR methodology. In fact, our findings are robust to estimating TFP with alternative algorithms, for example the popular OP and LP methods. Figure B1 shows the main event studies using TFP estimated with the GNR, OP, and LP methodologies. Regardless of the estimation technique, the result that trained firms started experiencing an increase in productivity after the delivery of the training stands. Moreover, the treatment effects are quantitatively similar across the three methods.

Propensity Score Matching

To show the robustness of the main findings, Section 5.1 discusses the results of several propensity score matching (PSM) between trained and nontrained firms. Table B3 shows the coefficients of the PSM algorithms.

[37] The 1947 input-output tables have been digitized by Soltan (2019) and are available at the following link: https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi%3A10.7910%2FDVN%2FMMHRU7 (downloaded in September 2018).

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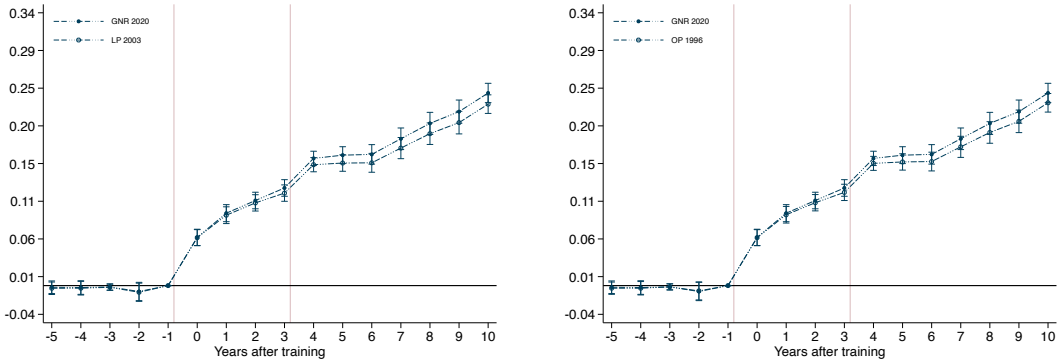
Figure B1: Alternative Estimations of TFP



Panel A: TFP, LP (2003) Panel B: TFP, OP (1996)

Notes. These graphs show the difference between estimating the TFP following the recent methodology by Gandhi, Navarro, and Rivers (2020) and the older methodologies proposed by Levinsohn and Petrin (2003) and Olley and Pakes (1996).

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Table B1: List, Definition, and Sources of Variables

Variable	Definition	Level, Source and Years of Coverage	Notes
Plants	Number of firm plants	Firm-year, Financial Statement, 1935-1955	
Employees	Number of employees	Firm-year, Financial Statement, 1935-1955	
Foundation year	Year of firm's foundation	Firm-year, Financial Statement, 1935-1955	
Sector	Sector in which firm operated	Firm, Replacement Schedules, imputed in 1941	See Section B.
Revenues	Annual operating revenues	Firm-year, Financial Statement, 1935-1955	
Sales	Annual revenues from sales	Firm-year, Financial Statement, 1935-1955	
Current assets	Assets that can be converted to cash within one year or less	Firm-year, Financial Statement, 1935-1955	
Total assets	Total amount of assets	Firm-year, Financial Statement, 1935-1955	
TFP	Total factor productivity	Firm-year, Financial Statement, calculated in 1935-1955	Authors' calculation following Gandhi, Navarro, and Rivers (2020)'s methodology
ROA	Ratio between profits and fixed gross assets	Firm-year, Financial Statement, calculated in 1935-1955	Authors' calculation
Gross fixed assets	Fixed gross asset is the value of land, buildings, and machines owned by the firm.	Firm-year, Financial Statement, 1935-1955	
Investment	Difference between current and lagged value of gross fixed assets	Firm-year, Financial Statement, 1935-1955	
Capital stock	Capital stock is calculated using the perpetual inventory method (PIM) from the gross fixed asset.	Firm-year, Financial Statement, calculated in 1935-1955	See table notes
Inventory	Value of inventory at cost	Firm-year, Financial Statement, 1935-1955	
Intermediate inputs	Sum of raw materials and services	Firm-year, Financial Statement, calculated in 1935-1955	
Maintenance	Cost of machine maintenance	Firm-year, Financial Statement, 1935-1955	
Injuries	Cost of workers' injuries	Firm-year, Financial Statement, 1935-1955	
Repairs	Cost of machine repairs	Firm-year, Financial Statement, 1935-1955	
Bonus payments	Cost of bonus paid to workers	Firm-year, Financial Statement, 1935-1955	
Product lines	Number of product lines	Firm-year, Financial Statement, 1935-1955	
Prob training	=1 if firm reported spending for on-the-job training	Firm-year, Financial Statement, 1935-1955	
Prob marketing	=1 if firm reported spending for marketing	Firm-year, Financial Statement, 1935-1955	
Strikes	Number of strikes	Firm-year, Work Stoppages Caused by Labor Management Disputes, BLS, 1935-1955	
Share African-Americans	% of African-American workers	Firm-year, Replacement Schedules, 1941-1945	
Share women	% of women in workforce	Firm-year, Replacement Schedules, 1941-1945	
Years of education	Average years of education of workforce	Firm-year, Replacement Schedules, 1941-1945	
Age of workforce	Average age of workforce	Firm-year, Replacement Schedules, 1941-1945	
Share drafted employees (1942-1945)	% of drafted employees	Firm, Replacement Schedules, 1942-1945	
Switched 3-digit SIC	Indicator if at least one war product was different from products in 1941 in 3-digit 1939 SIC codes	Firm, Civilian Production Administration and Replacement Schedules, imputed for the period 1940-1945	See Section B.
Switched 2-digit SIC	Indicator if at least one war product was different from products in 1941 in 2-digit 1939 SIC codes	Firm, Civilian Production Administration and Replacement Schedules, imputed for the period 1940-1945	See Section B.
Switched 1-digit SIC	Indicator if at least one war product was different from products in 1941 in 1-digit 1939 SIC codes	Firm, Civilian Production Administration and Replacement Schedules, imputed for the period 1940-1945	See Section B.
Number of contracts	Number of war contracts	Firm-year, Civilian Production Administration, 1940-1945	Aggregated at the firm-year level from the original contract-level data
Value of contracts	Value of contracts	Firm-year, Civilian Production Administration, 1940-1945	Aggregated at the firm-year level from the original contract-level data
Post-WWII refunds	Subsidies given to firms to go back to civil production	Firm-year, Financial Statement, 1946-1951	

Notes. To compute capital stock, we use the following PIM formula: $P_{t+1}K_{t+1} = P_{t+1}(1-\delta)P_tK_t + P_{t+1}I_{t+1}$, where K is gross fixed asset, I is investment, P is the capital price (set equal to the interest rate on credit from 1935 to 1955), and δ is the depreciation rate (set equal to 5.5 percent). To estimate K_0P_0 at replacement costs from its historical cost reported in the financial statement, we used the R^G factor suggested by Balakrishnan et al. (2000), computed as $R^G = \frac{[(1+g)^{\tau+1}-1](1+\pi)^{\tau}[(1+g)(1+\pi)-1]}{g\{[(1+g)(1+\pi)]^{\tau+1}-1\}}$ where τ is the average life of machines (assumed to be 15 years), π is the average capital price $\frac{P_t}{P_{t-1}}$ from 1935 to 1955 (equal to 1.00476667), and g is the (assumed constant) real GDP growth rate from 1935 to 1955 (equal to 1.0589524).

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Table B2: Estimation of Production Function

	I. Food			II. Textile			III.Wood			IV. Paper		
	β_l	β_k	β_m	β_l	β_k	β_m	β_l	β_k	β_m	β_l	β_k	β_m
GNR	0.26***	0.25***	0.49***	0.22***	0.25***	0.55***	0.21***	0.18***	0.63***	0.22***	0.28***	0.51***
	(0.02)	(0.03)	(0.05)	(0.01)	(0.03)	(0.06)	(0.02)	(0.01)	(0.04)	(0.03)	(0.03)	(0.06)
LP	0.32***	0.20***	0.51***	0.31***	0.16***	0.54***	0.30***	0.15***	0.60***	0.31***	0.14***	0.51***
	(0.04)	(0.02)	(0.03)	(0.02)	(0.01)	(0.05)	(0.01)	(0.02)	(0.03)	(0.02)	(0.01)	(0.04)
OP	0.33***	0.18***	0.53***	0.30***	0.18***	0.53***	0.31***	0.16***	0.57***	0.32***	0.21***	0.49***
	(0.03)	(0.01)	(0.05)	(0.03)	(0.04)	(0.05)	(0.02)	(0.01)	(0.04)	(0.02)	(0.02)	(0.03)
OLS	0.20***	0.15***	0.65***	0.18***	0.20***	0.62***	0.15***	0.16***	0.69***	0.17***	0.21***	0.62***
	(0.01)	(0.02)	(0.05)	(0.03)	(0.02)	(0.06)	(0.02)	(0.01)	(0.05)	(0.02)	(0.03)	(0.06)
Expenditure Shares	0.24	0.26	0.50	0.20	0.26	0.57	0.20	0.22	0.60	0.21	0.26	0.54

	V. Machinery			VI. Metals			VII. Chemicals			VIII. Construction		
	β_l	β_k	β_m	β_l	β_k	β_m	β_l	β_k	β_m	β_l	β_k	β_m
GNR	0.31***	0.20***	0.52***	0.21***	0.19***	0.61***	0.21***	0.15***	0.63***	0.20***	0.31***	0.52***
	(0.02)	(0.04)	(0.03)	(0.01)	(0.02)	(0.04)	(0.01)	(0.02)	(0.05)	(0.03)	(0.04)	(0.05)
LP	0.38***	0.15***	0.50***	0.29***	0.14***	0.59***	0.30***	0.14***	0.59***	0.30***	0.20***	0.51***
	(0.02)	(0.01)	(0.04)	(0.02)	(0.02)	(0.04)	(0.04)	(0.02)	(0.05)	(0.02)	(0.02)	(0.05)
OP	0.35***	0.17***	0.51***	0.27***	0.16***	0.55***	0.28***	0.15***	0.60***	0.28***	0.17***	0.52***
	(0.03)	(0.02)	(0.03)	(0.03)	(0.01)	(0.06)	(0.03)	(0.02)	(0.06)	(0.03)	(0.02)	(0.04)
OLS	0.25***	0.15***	0.60***	0.18***	0.15***	0.67***	0.18***	0.11***	0.72***	0.17***	0.20***	0.65***
	(0.02)	(0.01)	(0.06)	(0.03)	(0.02)	(0.04)	(0.04)	(0.02)	(0.04)	(0.02)	(0.01)	(0.06)
Expenditure Shares	0.29	0.22	0.55	0.19	0.22	0.58	0.17	0.15	0.68	0.20	0.22	0.61

	IX. Service			X. Transportation			XI. Communication		
	β_l	β_k	β_m	β_l	β_k	β_m	β_l	β_k	β_m
GNR	0.44***	0.15***	0.51***	0.23***	0.11***	0.68***	0.25***	0.27***	0.50***
	(0.04)	(0.02)	(0.05)	(0.02)	(0.02)	(0.05)	(0.03)	(0.04)	(0.05)
LP	0.48***	0.13***	0.44***	0.27***	0.10***	0.65***	0.35***	0.17***	0.50***
	(0.02)	(0.02)	(0.05)	(0.04)	(0.02)	(0.06)	(0.03)	(0.02)	(0.06)
OP	0.44***	0.15***	0.46***	0.24***	0.15***	0.60***	0.31***	0.19***	0.52***
	(0.03)	(0.01)	(0.04)	(0.03)	(0.01)	(0.07)	(0.04)	(0.02)	(0.05)
OLS	0.33***	0.13***	0.59***	0.20***	0.10***	0.72***	0.22***	0.23***	0.57***
	(0.03)	(0.01)	(0.06)	(0.04)	(0.02)	(0.07)	(0.03)	(0.01)	(0.06)
Expenditure Shares	0.39	0.17	0.55	0.25	0.15	0.63	0.22	0.25	0.54

Notes. Coefficients on labor (β_l), capital (β_k) and intermediate goods (β_m) estimated with the methodology proposed by Gandhi, Navarro, and Rivers (2020) (GNR), Levinsohn and Petrin (2003) (LP), or Olley and Pakes (1996) (OP). Moreover, we show the coefficients from simple OLS regressions, as well as expenditure shares for each two-digit sector. *** denotes 1%, ** denotes 5%, and * denotes 10% significance.

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Table B3: Coefficients of PSM between Trained and Nontrained Firms

	TWI	TWI	TWI	TWI	TWI	TWI
	(1)	(2)	(3)	(4)	(5)	(6)
Plants	0.0034	0.0034	-0.0308	-0.0310	-0.0330	-0.0360
	(0.0061)	(0.0027)	(0.0322)	(0.0323)	(0.0330)	(0.0334)
Employees	-0.0002***	-0.0000	-0.0004***	-0.0004***	-0.0004***	-0.0001
	(0.0001)	(0.0000)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
TFP	-0.0739**	-0.0551***	-0.0532	-0.0549*	-0.0538	-0.0634*
	(0.0323)	(0.0144)	(0.0330)	(0.0332)	(0.0342)	(0.0346)
Distance to nearest port	0.0001	0.0001*	0.0001	0.0002	0.0003	0.0003
	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0002)	(0.0002)
Distance to nearest railroad station	-0.0007*	-0.0007***	-0.0007*	-0.0007	-0.0009	-0.0010*
	(0.0004)	(0.0002)	(0.0004)	(0.0004)	(0.0006)	(0.0006)
Sales	0.0000**	0.0000	0.0000***	0.0000***	0.0000***	0.0000***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Manufacturing	-0.0190	-0.0222	-0.0206	-0.0267	-0.0581	-0.0631
	(0.0734)	(0.0328)	(0.0735)	(0.0739)	(0.0757)	(0.0764)
Transportation	-0.0506	-0.0540	-0.0516	-0.0454	-0.0820	-0.0676
	(0.0820)	(0.0367)	(0.0821)	(0.0824)	(0.0843)	(0.0851)
Services	0.0148	0.0135	0.0197	0.0147	-0.0160	0.0057
	(0.1088)	(0.0486)	(0.1088)	(0.1094)	(0.1121)	(0.1130)
Foundation year			-0.0041	-0.0042	-0.0048	-0.0051
			(0.0031)	(0.0031)	(0.0032)	(0.0032)
Inventory			0.0000	0.0000	0.0000	0.0000
			(0.0000)	(0.0000)	(0.0000)	(0.0000)
Capital			0.0000	0.0000	0.0000	-0.0000**
			(0.0000)	(0.0000)	(0.0000)	(0.0000)
Current assets			0.0000	0.0000	0.0000	0.0000
			(0.0000)	(0.0000)	(0.0000)	(0.0000)
Investment			-0.0000	-0.0000	-0.0000	-0.0000
			(0.0000)	(0.0000)	(0.0000)	(0.0000)
Strikes			0.0503	0.0520	0.0481	0.0551
			(0.0441)	(0.0442)	(0.0451)	(0.0456)
Injuries			-0.0000	-0.0000	-0.0000	-0.0000
			(0.0000)	(0.0000)	(0.0000)	(0.0000)
Bonus			-0.0000	-0.0000*	-0.0000	-0.0000*
			(0.0000)	(0.0000)	(0.0000)	(0.0000)
Subsidiaries			0.0025	0.0014	0.0125	0.0070
			(0.0293)	(0.0294)	(0.0301)	(0.0303)
Observations	11,575	57,867	11,575	11,575	11,575	11,567
Periods	-1	$[-5, -1]$	-1	-1	-1	-1
Year FEs	No	Yes	No	No	No	No
District FEs	No	No	No	Yes	No	No
Subdistrict FEs	No	No	No	No	Yes	Yes
App. window FEs	No	No	No	No	No	Yes

Notes. This table shows the coefficients from different propensity score matching between trained and nontrained firms. Table A7 shows the main results using the different matched samples. *** p<0.01, ** p<0.05, * p<0.1.

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C Results on TWI Instructors' Assignments

Table C1: Correlation Between TWI Training and Instructors' Composition

	J-I first	J-R first	J-M first	J-I + J-R	J-R + J-I	J-R + J-M	J-M + J-R	J-I + J-M	J-M + J-I
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Max J-I	0.215***								
	(0.009)								
Max J-R		0.197***							
		(0.010)							
Max J-M			0.192***						
			(0.008)						
Max J-I + J-R				0.136***					
				(0.013)					
Max J-R + J-I					0.128***				
					(0.011)				
Max J-R + J-M						0.166***			
						(0.016)			
Max J-M + J-R							0.080***		
							(0.013)		
Max J-I + J-M								0.152***	
								(0.014)	
Max J-M + J-I									0.179***
									(0.009)
Observations	10,735	10,735	10,735	10,735	10,735	10,735	10,735	10,735	10,735
R^2	0.189	0.192	0.188	0.146	0.147	0.146	0.121	0.135	0.150
Mean dep. var.	0.18	0.18	0.17	0.09	0.10	0.12	0.10	0.13	0.11

Notes. This table shows the correlations between the firm-level TWI training and the share of TWI instructors assigned to a firm's subdistrict and application window. The dependent variables are the following dummies: J-I first = 1 for firms that first received the Job-Instructions training; J-R first = 1 for firms that first received the Job-Relations training; J-M first = 1 for firms that first received the Job-Methods training; J-I + J-R = 1 for firms that received first the J-I training and then the J-R training; J-R + J-I = 1 for firms that received first the J-R training and then the J-I training; J-R + J-M = 1 for firms that received first the J-R training and then the J-M training; J-M + J-R = 1 for firms that received first the J-M training and then the J-R training; J-I + J-M = 1 for firms that received first the J-I training and then the J-M training; J-M + J-I = 1 for firms that received first the J-M training and then the J-I training. The independent variables measure the following: Max J-x = 1 for firms that applied in subdistricts and application windows in which the share of instructors for training J-x (I, R, or M) was the highest; Max J-x + J-y = 1 for firms that applied in subdistricts and application windows in which the share of instructors for training J-x (I, R, or M) was the highest and the share of instructors for training J-y ($y \neq x$) was the second highest. The regressions also include fixed effects for county-sector pairs, the application window, and the number of days between the opening of the window and the firm application. The standard errors are clustered at the subdistrict-application window level. *** p<0.01, ** p<0.05, * p<0.1.

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Table C2: Correlation Between Firm and County Variables and TWI Instructors

	Max J-I (1)	Max J-R (2)	Max J-M (3)	Max J-I + J-R (4)	Max J-R + J-I (5)	Max J-R + J-M (6)	Max J-M + J-R (7)	Max J-I + J-M (8)	Max J-M + J-I (9)
Panel A: Regressions of TWI instructors on firm characteristics in period -1									
p-value of joint significance	0.99	0.95	0.70	0.35	0.94	0.90	0.57	0.99	0.92
Observations	10,735	10,735	10,735	10,735	10,735	10,735	10,735	10,735	10,735
Panel B: Regressions of TWI instructors on firm characteristics, including number and value of government contracts, in period -1									
p-value of joint significance	0.99	0.96	0.82	0.38	0.94	0.86	0.70	0.98	0.96
Observations	10,727	10,727	10,727	10,727	10,727	10,727	10,727	10,727	10,727
Panel C: Regressions of TWI instructors on county characteristics in year 1940									
p-value of joint significance	0.01	0.14	0.01	0.01	0.71	0.07	0.86	0.23	0.12
Observations	10,745	10,745	10,745	10,745	10,745	10,745	10,745	10,745	10,745
Panel D: Regressions of TWI instructors on county characteristics in year 1930									
p-value of joint significance	0.05	0.19	0.14	0.05	0.83	0.36	0.66	0.07	0.71
Observations	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859
Panel E: Regressions of TWI instructors on county characteristics in year 1920									
p-value of joint significance	0.04	0.18	0.12	0.01	0.57	0.09	0.72	0.40	0.85
Observations	10,873	10,873	10,873	10,873	10,873	10,873	10,873	10,873	10,873

Notes. Panel A shows the p-value of the test of joint significance of the coefficients of fifteen firm characteristics observed in period -1. The variables are: the logs of sales, value added, number of employees, number of plants, foundation year, the value of inventory, capital, current assets, investments, number of workers' strikes, monetary compensation for workers' injuries, performance-based bonus payments, number of subsidiaries, as well as distance to the nearest railroad station and distance to the nearest port. Panel B adds the inverse hyperbolic sine function of the number and value of government contracts. The regressions also include fixed effects for county-sector pairs, the application window, and the number of days between the opening of the window and the firm application. Panels C, D, and E show the p-value of the test of joint significance of the coefficients of several county characteristics measured in 1940, 1930, and 1920, respectively. The county-level variables are imputed to firms based on their location. These regressions include: log population, log of the manufacturing value added, log number of manufacturing establishments, log number of manufacturing employees, log average manufacturing wage, log total expenses in manufacturing, log value of manufacturing production, farms per capita, unemployment share (available only in 1930 and 1940), population per square mile, share of male residents, share of black population, share of urban population, share of illiterate population (available only in 1920 and 1930). County data are from IPUMS NHGIS, www.nhgis.org. The regressions also include fixed effects for subdistrict-sector pairs, the application window, and the number of days between the opening of the window and the firm application. The description of the dependent variables is in the notes of Table C1. Standard errors are clustered at the subdistrict-application window level.

Table C3: Autocorrelation between Current and Past TWI Instructors

	Max J-I$_t$ (1)	Max J-R$_t$ (2)	Max J-M$_t$ (3)	Max J-I + J-R$_t$ (4)	Max J-R + J-I$_t$ (5)	Max J-R + J-M$_t$ (6)	Max J-M + J-R$_t$ (7)	Max J-I + J-M$_t$ (8)	Max J-M + J-I$_t$ (9)
Max J-I$_{t-1}$	0.002								
	(0.022)								
Max J-R$_{t-1}$		0.019							
		(0.025)							
Max J-M$_{t-1}$			-0.002						
			(0.022)						
Max J-I + J-R$_{t-1}$				-0.020					
				(0.023)					
Max J-R + J-I$_{t-1}$					0.016				
					(0.026)				
Max J-R + J-M$_{t-1}$						0.046*			
						(0.026)			
Max J-M + J-R$_{t-1}$							-0.037*		
							(0.020)		
Max J-I + J-M$_{t-1}$								0.012	
								(0.023)	
Max J-M + J-I$_{t-1}$									-0.006
									(0.023)
Observations	1,873	1,873	1,873	1,873	1,873	1,873	1,873	1,873	1,873
R^2	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.002	0.001	< 0.001	< 0.001

Notes. The table shows the autocorrelation between the current and past share of instructors for different types of TWI trainings. The unit of observation is one of 364 subdistricts and one of 10 application windows. The description of the dependent variables is in the notes of Table C1. The standard errors are clustered at the subdistrict level. *** p<0.01, ** p<0.05, * p<0.1.

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Table C4: IV and OLS Event Studies

	Sales		TFP		ROA	
	(1)	(2)	(3)	(4)	(5)	(6)
J-I x Post TWI	0.120***	0.185**	0.053***	0.055	-0.005	-0.025
	(0.007)	(0.086)	(0.005)	(0.054)	(0.004)	(0.056)
J-R x Post TWI	0.155***	0.263***	0.277***	0.313***	0.147***	0.135**
	(0.008)	(0.083)	(0.004)	(0.052)	(0.005)	(0.054)
J-M x Post TWI	0.113***	0.178***	0.144***	0.154***	0.052***	0.024
	(0.007)	(0.054)	(0.004)	(0.034)	(0.006)	(0.036)
Specification	OLS	IV	OLS	IV	OLS	IV
Observations	67,472	67,472	67,472	67,472	67,472	67,472

Notes. This table shows the coefficients of the interactions between the training variables and a post-TWI dummy variable. In the IV specifications, we instrument for the TWI training variables using three dummy variables that measure the allocation of TWI instructors to each subdistrict and application window: Max J-x = 1 for firms that applied in subdistricts and application windows in which the share of instructors for training J-x (I, R, or M) was the highest. The sample includes applicant firms that either received only one TWI training or no training at all. The standard errors are clustered at the subdistrict-application window level. *** p<0.01, ** p<0.05, * p<0.1.

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