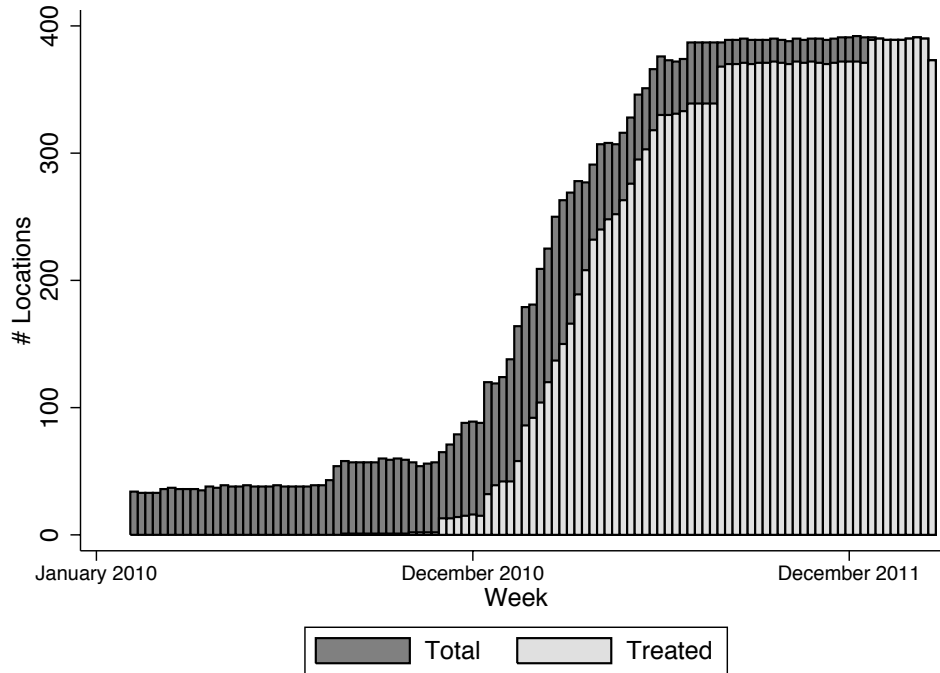


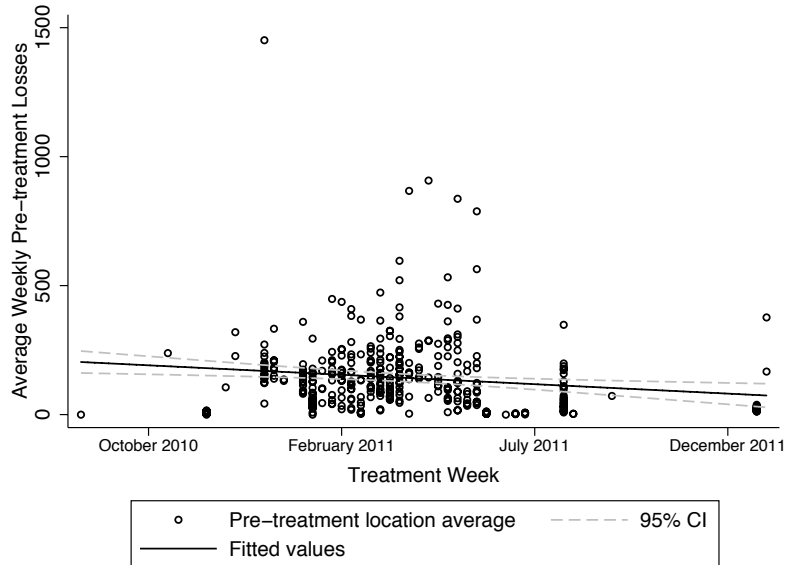
Appendix

Figure A1 Number of Restaurant Locations by Week in the Dataset



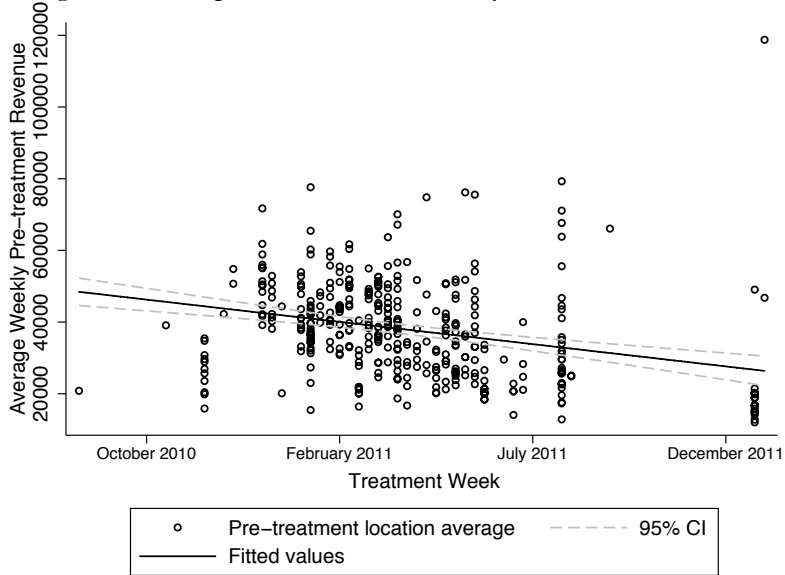
Note. Treated restaurants are those that have adopted the theft monitoring system.

Figure A2 Implementation Weeks by Pre-treatment Losses



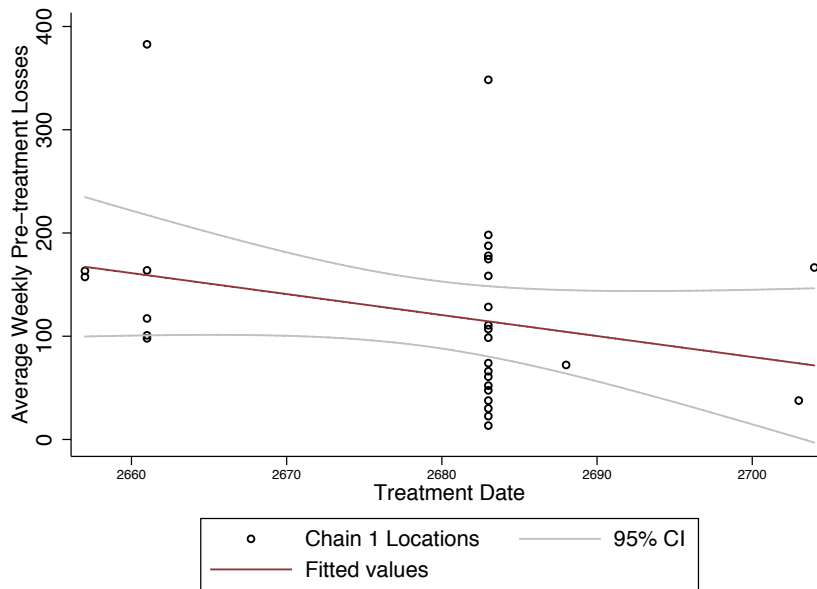
Note. Each point represents the average weekly total losses in USD for one restaurant, for all weeks prior to treatment. Regressing treatment week on the weekly loss amount with no controls yields a coefficient of -0.013 ($p = 0.001$).

Figure A3 Implementation Weeks by Pre-treatment Sales



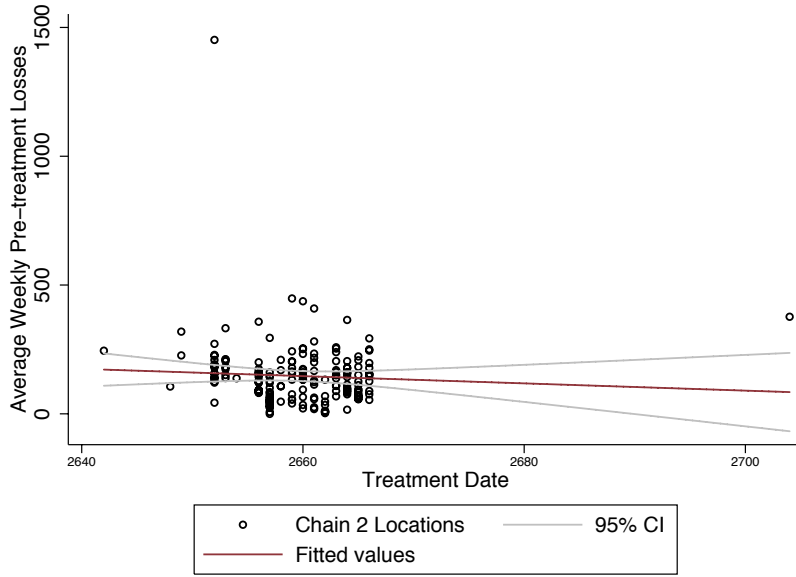
Note. Each point represents the average weekly check revenue in USD for one restaurant, for all weeks prior to treatment. Regressing treatment week on the weekly revenue with no controls yields a coefficient of -0.00025 ($p = 0.01$)

Figure A4 Chain 1 Adoption Weeks by Pre-treatment Losses



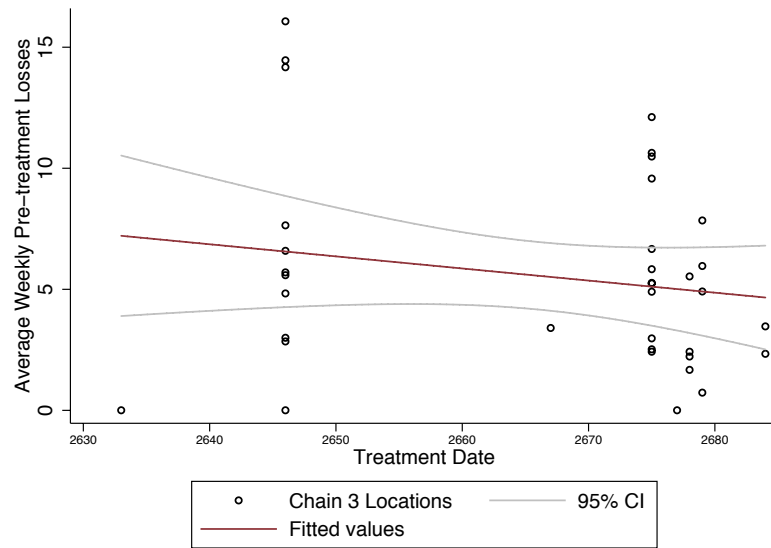
Note. Each point represents the adoption date of one location from Chain 1. Lines represents linear fit with 95% confidence intervals. Slope is not different from zero at the 10% level.

Figure A5 Chain 2 Adoption Weeks by Pre-treatment Losses



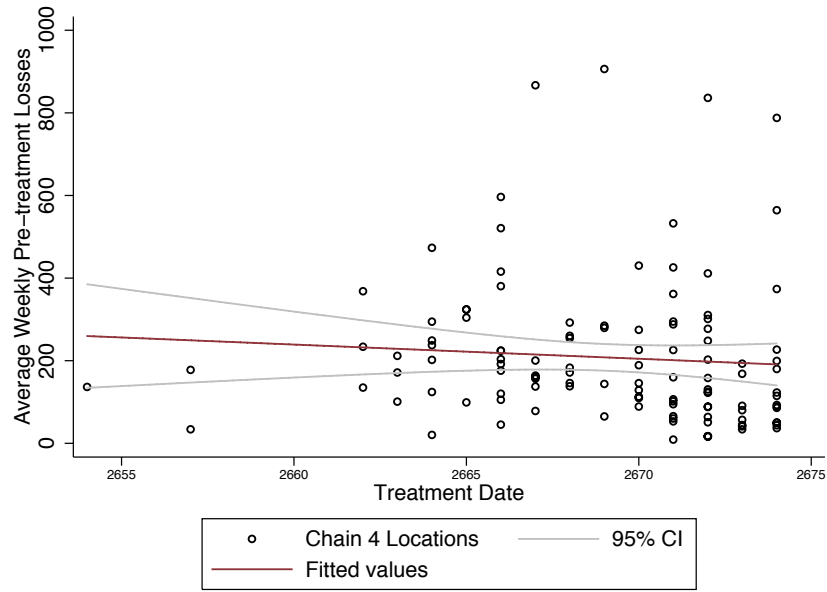
Note. Each point represents the adoption date of one location from Chain 2. Lines represents linear fit with 95% confidence intervals. Slope is not different from zero at the 10% level.

Figure A6 Chain 3 Adoption Weeks by Pre-treatment Losses



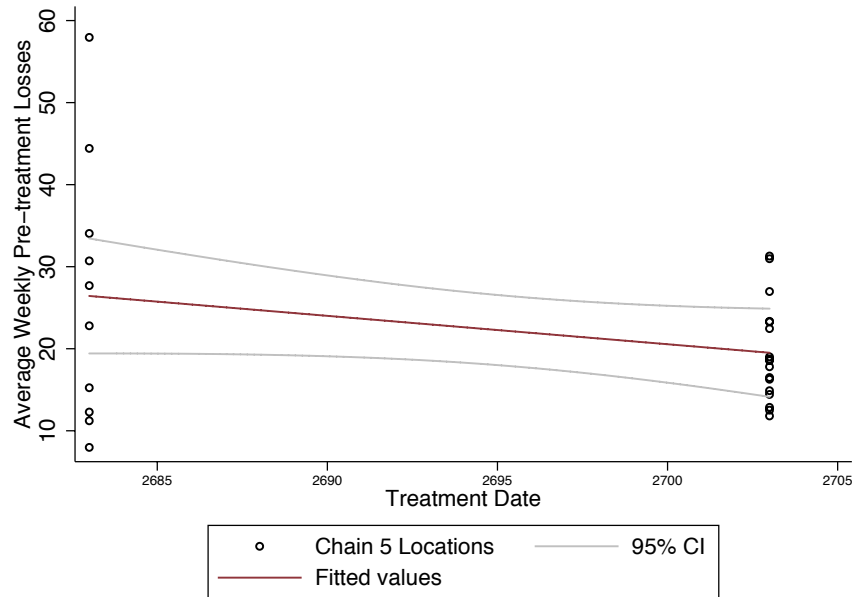
Note. Each point represents the adoption date of one location from Chain 3. Lines represents linear fit with 95% confidence intervals. Slope is not different from zero at the 10% level.

Figure A7 Chain 2 Adoption Weeks by Pre-treatment Losses



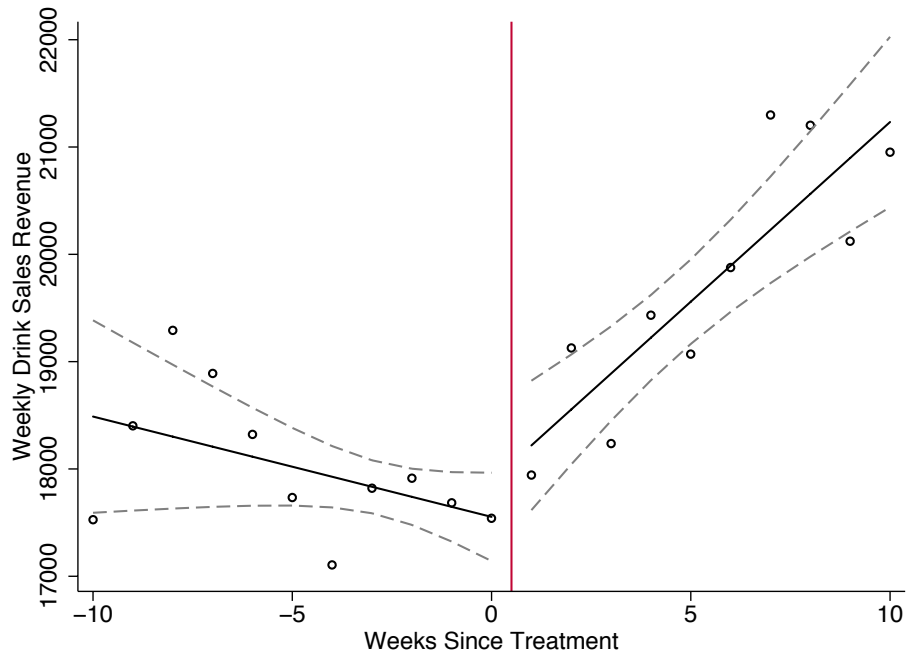
Note. Each point represents the adoption date of one location from Chain 4. Lines represents linear fit with 95% confidence intervals. Slope is not different from zero at the 10% level.

Figure A8 Chain 5 Adoption Weeks by Pre-treatment Losses



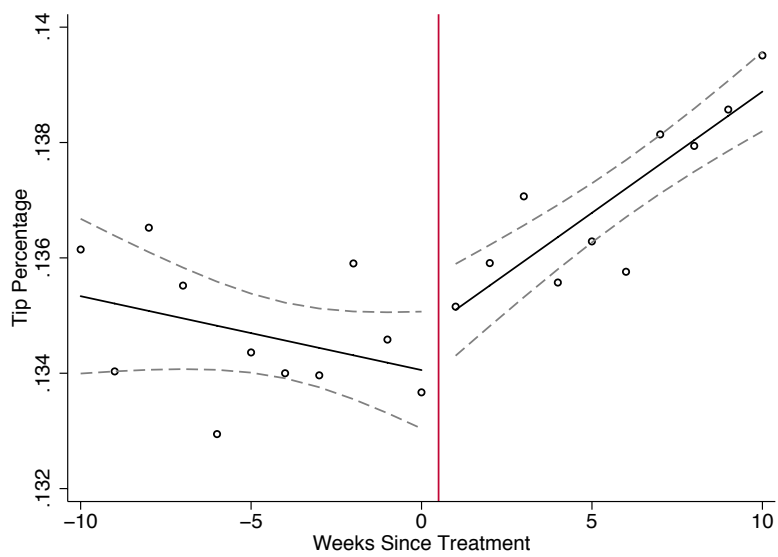
Note. Each point represents the adoption date of one location from Chain 5. Lines represents linear fit with 95% confidence intervals. Slope is not different from zero at the 10% level.

Figure A9 Treatment Effect on Drink Revenue in Chain 1



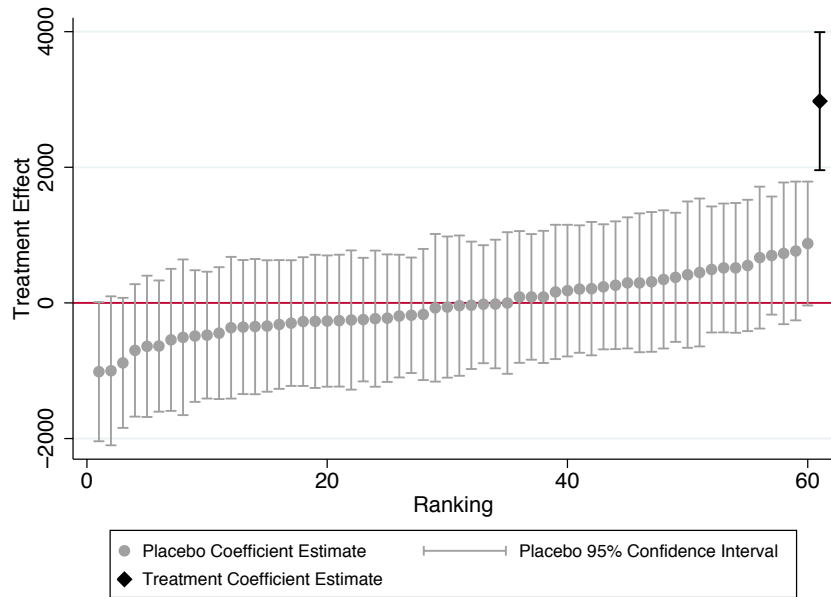
Note. Each point represents the average weekly drink revenue for 28 restaurants in Chain 1. Dashed lines represent 95% confidence intervals.

Figure A10 Treatment Effect on Tip Percentage in Chain 1



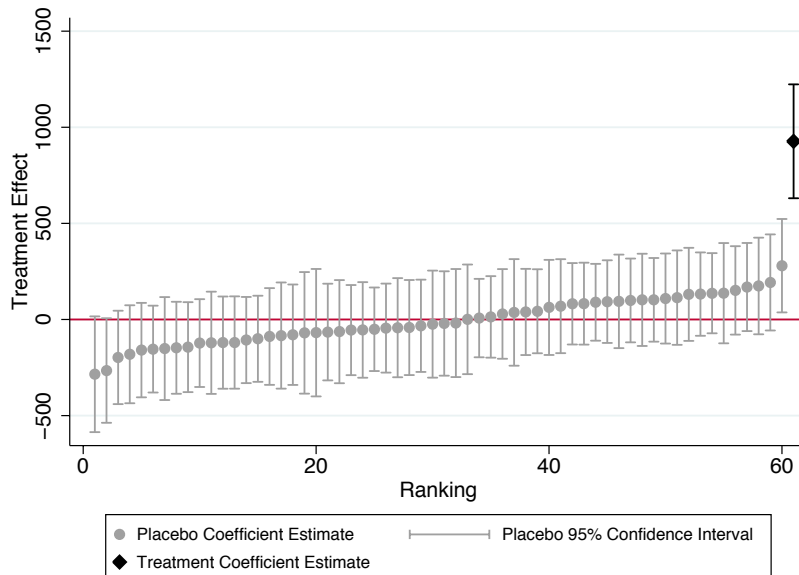
Note. Each point represents the average weekly tip percentage for 28 restaurants in Chain 1. Dashed lines represent 95% confidence intervals.

Figure A11 Placebo Tests of Treatment Effect on Total Revenue



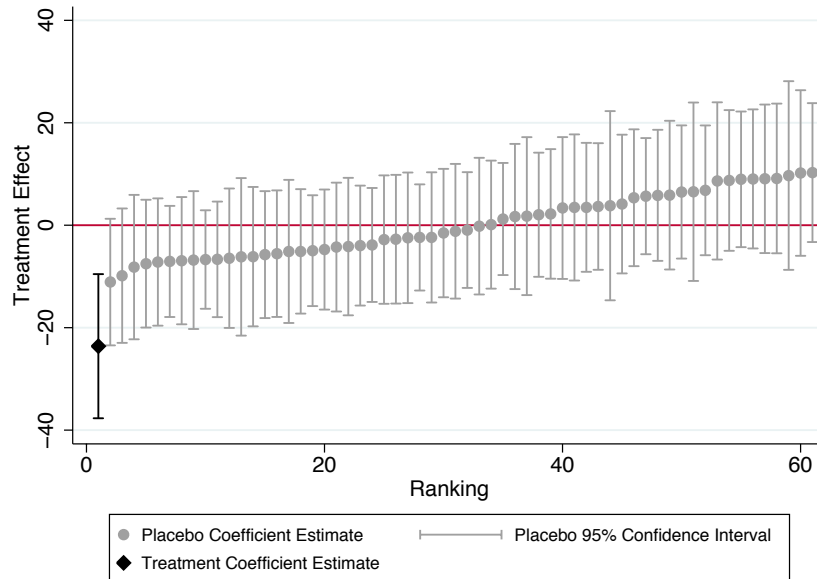
Note. Actual treatment dates were randomly assigned to restaurants 60 times. Each point and whisker represents an OLS regression with restaurant fixed effects and full controls, using the weekly restaurant data. The coefficient and confidence intervals for the true data are represented in black.

Figure A12 Placebo Tests of Treatment Effect on Drink Revenue



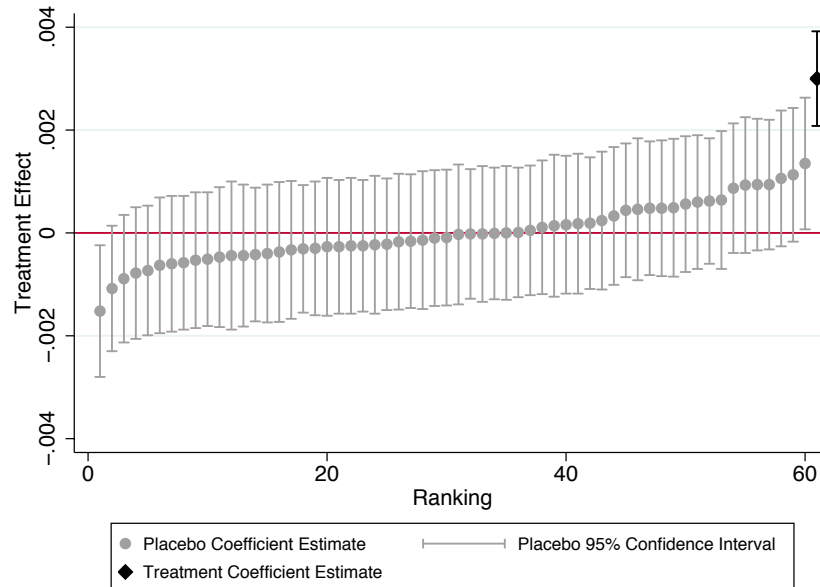
Note. Actual treatment dates were randomly assigned to restaurants 60 times. Each point and whisker represents an OLS regression with restaurant fixed effects and full controls, using the weekly restaurant data. The coefficient and confidence intervals for the true data are represented in black.

Figure A13 Placebo Tests of Treatment Effect on Total Losses



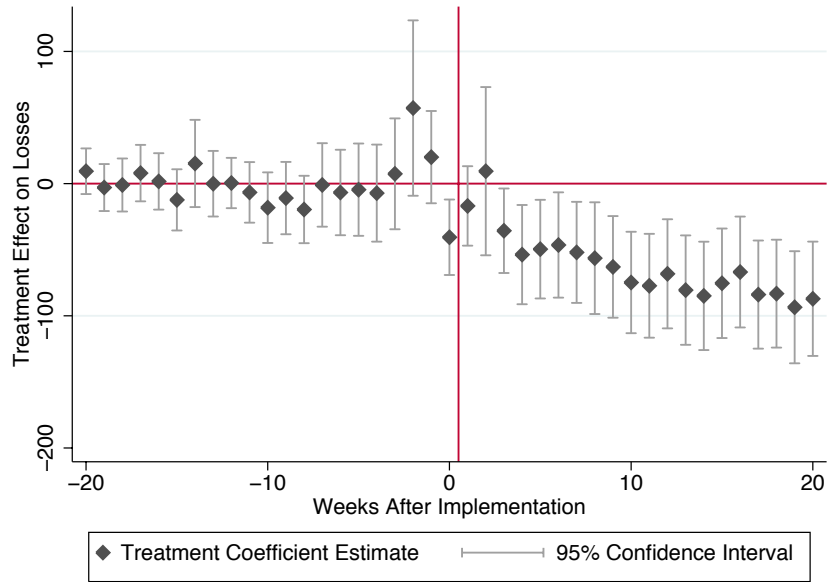
Note. Actual treatment dates were randomly assigned to restaurants 60 times. Each point and whisker represents an OLS regression with restaurant fixed effects and full controls, using the weekly restaurant data. The coefficient and confidence intervals for the true data are represented in black.

Figure A14 Placebo Tests of Treatment Effect on Tip Percentage



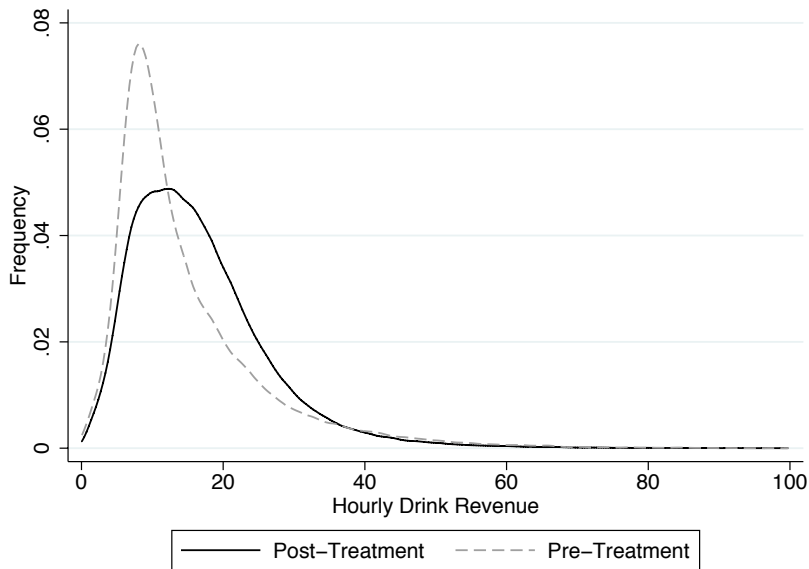
Note. Actual treatment dates were randomly assigned to restaurants 60 times. Each point and whisker represents an OLS regression with restaurant fixed effects and full controls, using the weekly restaurant data. The coefficient and confidence intervals for the true data are represented in black.

Figure A15 Treatment Effect Estimates for Total Losses Before and After IT Implementation



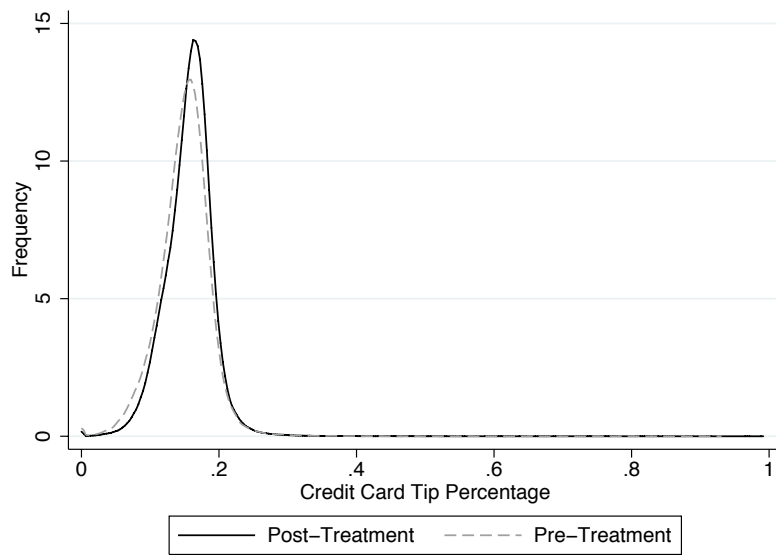
Note. Imprecise pre-treatment jump in losses based on one outlier location with \$3,273 and \$5,470 in losses three and two weeks before implementation, respectively.

Figure A16 Distribution of Hourly Drink Revenue Pre- and Post-Treatment



Note. Epinechnikov kernel density estimates of raw hourly drink revenue averages at the worker week level.

Figure A17 Distribution of Tip Percentages Pre- and Post-Treatment



Note. Epinechnikov kernel density estimates of raw hourly drink revenue averages at the worker week level.

Table A1 Weekly Restaurant Means by Chain

Variable	Chain 1	Chain 2	Chain 3	Chain 4	Chain 5
Total Losses	\$92.06	\$124.01	\$4.85	\$180.00	\$18.79
Check Revenue	\$50,639	\$48,863	\$25,257	\$50,126	\$17,199
Drink Revenue	\$17,149	\$7,194	\$3,401	\$13,485	\$4,711
Tip Percentage	13.6%	14.7%	14.1%	16.0%	---
Week Added	2677.2	2659.0	2666.5	2668.5	2697.2
Treated	0.41	0.92	0.44	0.97	0.31
Locations	29	181	36	119	27
Workers/Day	18.8	14.3	13.1	19.6	10.5
Observations	2,219	10,081	3,588	5,143	1,298

Notes: Total losses represent theft identified by the IT system. Treated is a dummy variable indicating the theft monitoring system has been implemented. Week Added represents the week of theft monitoring implementation (in STATA format). Week 2656 is the first week in March, 2011. All numbers represent means. Chain 5 does not report tips.

Table A2 Models Using Block-Bootstrapped Standard Errors

Dependent variable:	Location models				Worker models			
	(1) Losses	(2) Check revenue	(3) Drink revenue	(4) Tip pct.	(5) Hourly losses	(6) Hourly check rev.	(7) Hourly drink rev.	(8) Tip pct.
<i>Treated with Rest. Guard</i>	-23.61*** (6.65)	2,975.21*** (470.20)	926.97*** (142.88)	0.0030*** (0.0005)	-0.056*** (0.008)	2.690*** (0.186)	0.883*** (0.071)	0.0019*** (0.0003)
Week FE	Included	Included	Included	Included	Included	Included	Included	Included
Location FE	Included	Included	Included	Included	-	-	-	-
Worker FE	-	-	-	-	Included	Included	Included	Included
Constant	122.31*** (7.08)	30,162.30*** (960.69)	7182.84*** (274.00)	0.1475*** (0.0011)	0.164*** (0.007)	60.941*** (0.585)	12.009*** (0.185)	0.1574*** (0.0015)
Observations	22,329	22,329	22,329	20,901	439,838	439,838	439,838	437,860

Note. Standard errors are block bootstrapped by location level in columns (1)-(4) and block bootstrapped by worker in columns (5)-(8). * significant at the 10% confidence level, ** significant at the 5% confidence level, *** significant at the 1% confidence level. Tip models have fewer observations due to some locations not tracking tips.

Table A3 Models Using Winsorized Dependent Variables

Dependent variable:	(1) Losses	(2) Check revenue	(3) Drink revenue	(4) Tip pct.
<i>Treated with Rest. Guard</i>	-22.35*** (4.78)	3040.54*** (484.45)	794.56*** (129.61)	0.0030*** (0.0005)
Week fixed effects	Included	Included	Included	Included
Location fixed effects	Included	Included	Included	Included
Constant	112.00*** (3.33)	31,291.70*** (869.15)	7323.82*** (135.35)	0.1476*** (0.0011)
Adjusted R-squared	0.404	0.827	0.896	0.730
Observations	22,329	22,329	22,329	20,912

Note. All data two standard deviations or more above the mean are winsorized. Data more than two standard deviations below the mean are winsorized in models (2)-(4). Standard errors clustered at the location level in parentheses. * significant at the 10% confidence level, ** significant at the 5% confidence level, *** significant at the 1% confidence level. Tip models have fewer observations due to some locations not tracking tips.

Table A4 Models Using Logged Dependent Variables

Dependent variable:	Location models				Worker models			
	(1) Logged losses	(2) Logged check rev.	(3) Logged drink rev.	(4) Logged tip pct.	(5) Logged losses	(6) Logged check rev.	(7) Logged drink rev.	(8) Logged tip pct.
<i>Treated with Rest. Guard</i>	-0.261*** (0.057)	0.100*** (0.014)	0.104*** (0.014)	0.0027*** (0.0004)	-0.020*** (0.003)	0.047*** (0.007)	0.053*** (0.008)	0.0017*** (0.0003)
Week fixed effects	Included	Included	Included	Included	Included	Included	Included	Included
Shift controls	--	--	--	--	Included	Included	Included	Included
Worker fixed effects	--	--	--	--	Included	Included	Included	Included
Location fixed effects	Included	Included	Included	Included	--	--	--	--
Constant	4.065*** (0.241)	9.905*** (0.023)	8.414*** (0.044)	0.1374*** (0.0010)	0.086*** (0.005)	3.999*** (0.020)	2.384*** (0.029)	0.1455*** (0.0013)
Adjusted R-squared	0.626	0.835	0.897	0.726	0.100	0.631	0.579	0.337
Observations	22,329	22,329	22,329	20,912	439,838	439,838	439,838	437,860

Note. Standard errors clustered at the location level in parentheses. * significant at the 10% confidence level, ** significant at the 5% confidence level, *** significant at the 1% confidence level. Tip models have fewer observations due to some locations not tracking tips.

Table A5 Average Check Time Models

	(1)	(2)	(3)
Sample:	Restaurant	Worker	Worker
Dependent variable:	Check time (Minutes)	Check time (Minutes)	Check time (Minutes)
<i>Treated with Rest. Guard</i>	0.327 (0.272)	-0.161 (0.158)	-0.225 (0.162)
Week fixed effects	Included	Included	Included
Shift controls	--	Included	Included
Location fixed effects	Included	Included	--
Worker fixed effects	--	--	Included
Constant	47.348*** (1.104)	50.993*** (0.486)	51.219*** (0.458)
Adjusted R-squared	0.838	0.656	0.483
Observations	22,262	438,679	438,679

Note. Check time is the average length of stay in minutes for tables. Standard errors clustered at the location level in parentheses. * significant at the 10% confidence level, ** significant at the 5% confidence level, *** significant at the 1% confidence level.

Table A6 Persistence of Effects for Locations with Three Post-Treatment Months

	(1)	(2)	(3)	(4)
Dependent variable:	Losses	Check revenue	Drink revenue	Tip pct.
<i>Treatment month 1</i>	-8.53 (9.64)	4,320.90*** (533.69)	1041.88*** (178.49)	0.0028*** (0.0006)
<i>Treatment month 2</i>	-32.26*** (7.84)	4,940.41*** (515.18)	1285.32*** (176.25)	0.0032*** (0.0006)
<i>Treatment month 3</i>	-52.06*** (8.67)	2,468.52*** (518.54)	759.66*** (163.72)	0.0044*** (0.0006)
Week fixed effects	Included	Included	Included	Included
Location fixed effects	Included	Included	Included	Included
Constant	128.10*** (4.17)	31,284.22*** (776.27)	7341.28*** (134.79)	0.1475*** (0.0012)
Adjusted R-squared	0.174	0.816	0.895	0.728
Observations	21,303	21,303	21,303	20,810

Note. Standard errors clustered at the location level in parentheses. * significant at the 10% confidence level, ** significant at the 5% confidence level, *** significant at the 1% confidence level. Tip models have fewer observations due to some locations not tracking tips.

Table A7 Models Using Left- and Right-Truncated Samples

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable:	Losses	Check revenue	Drink revenue	Tip pct.	Losses	Check revenue	Drink revenue	Tip pct.
Sample start week					2660	2660	2660	2660
Sample end week	2681	2681	2681	2681				
<i>Treated with Rest. Guard</i>	-25.22*** (8.65)	4,621.76*** (619.12)	764.68*** (172.48)	0.0025*** (0.0003)	-17.87** (8.62)	2,804.30*** (650.44)	1329.28*** (185.72)	0.0045*** (0.0005)
Week fixed effects	Included	Included	Included	Included	Included	Included	Included	Included
Location fixed effects	Included	Included	Included	Included	Included	Included	Included	Included
Constant	119.79*** (4.86)	27,635.63*** (694.29)	6369.74*** (121.07)	0.1708*** (0.0007)	129.41*** (9.43)	42,029.44*** (802.18)	7688.61*** (193.89)	0.1523*** (0.0006)
Adjusted R-squared	0.275	0.832	0.898	0.792	0.163	0.823	0.907	0.706
Observations	10,271	10,271	10,271	9,707	18,584	18,584	18,584	17,376

Note. Columns (1)-(4) do not left truncate. Columns (5)-(8) do not right truncate. Standard errors clustered at the location level in parentheses. * significant at the 10% confidence level, ** significant at the 5% confidence level, *** significant at the 1% confidence level. Tip models have fewer observations due to some locations not tracking tips.

Table A8 Models Using Treatment-Specific Time Trends

Dependent variable:	(1)	(2)	(3)	(4)
	Losses	Check revenue	Drink revenue	Tip pct.
<i>Treated with Rest. Guard</i>	-17.44** (8.86)	6,861.18*** (1566.38)	1932.81*** (625.27)	0.0028*** (0.0008)
Week FE X treatment	Included	Included	Included	Included
Location fixed effects	Included	Included	Included	Included
Constant	122.38*** (3.80)	29,991.54*** (692.93)	7140.51*** (127.81)	0.1474*** (0.0011)
Adjusted R-squared	0.178	0.824	0.893	0.728
Observations	22,329	22,329	22,329	20,912

Note. Standard errors clustered at the location level in parentheses. * significant at the 10% confidence level, ** significant at the 5% confidence level, *** significant at the 1% confidence level. Tip models have fewer observations due to some locations not tracking tips.