The Heterogeneous Effects of COVID-19 Lockdowns on Crime across the World

MC results with US cities excluded after May 25th

Trajtenberg et al. (2024)

This version: June 03, 2024

Main results

Crime and stay-at-home indexes

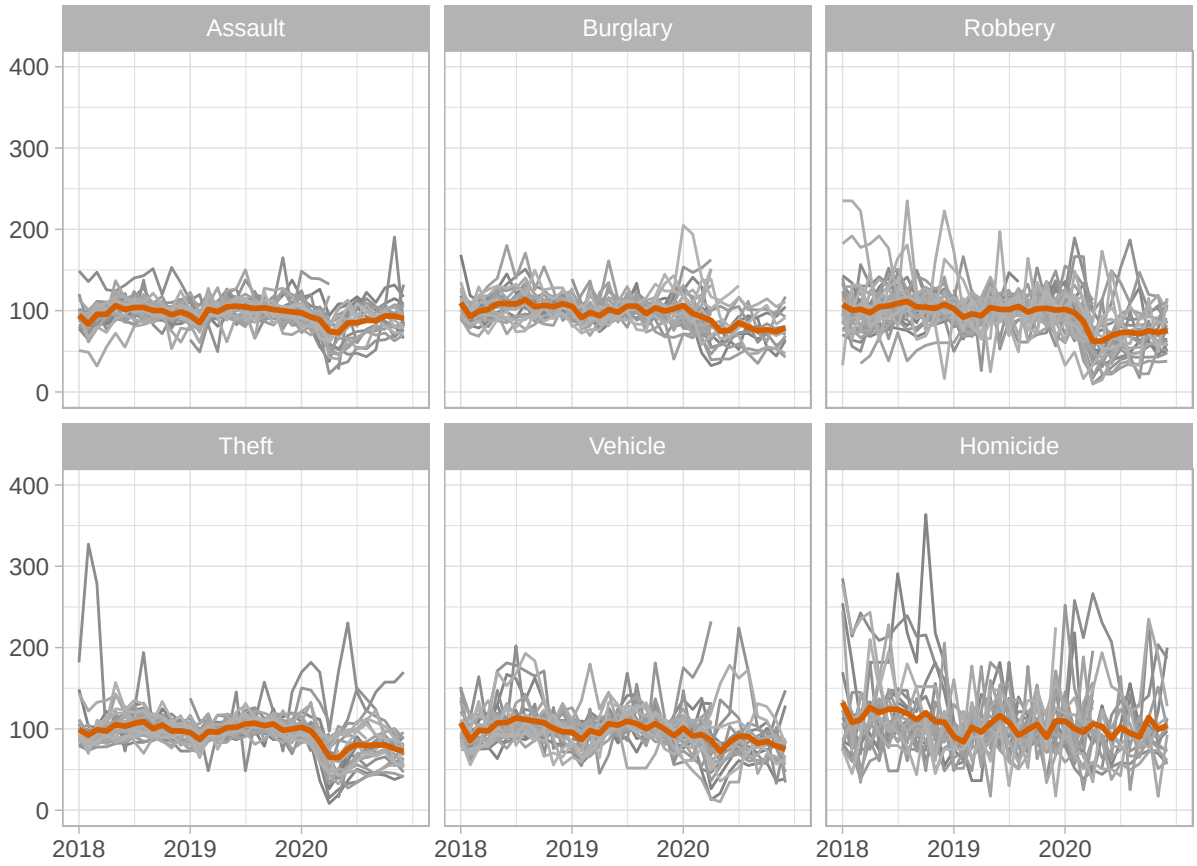

Figure 1: Crime indexes (monthly).

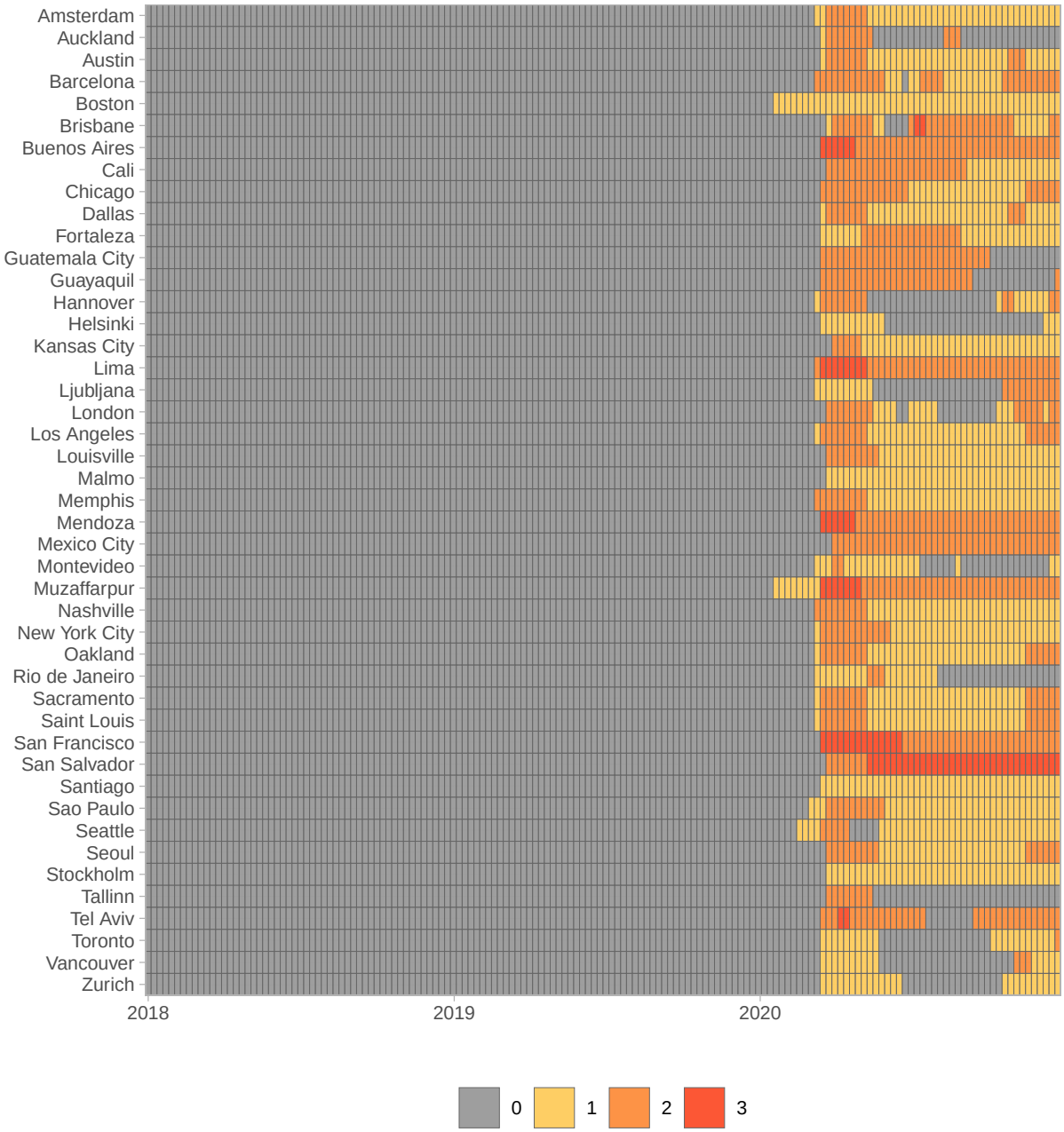

Figure 2: Stay-at-home index (weekly).

Table 1: Estimated effects March/2020 - December/2020.

	Assault	Burglary	Robbery	Theft	Vehicle	Homicide
Treatment 1	−20.06	−20.43	−28.25	−31.53	−18.81	−10.35
	2.34	4.29	4.90	3.92	3.84	6.43
	−24.81	−29.20	−38.14	−39.45	−26.63	−23.62
	−15.31	−11.66	−18.37	−23.61	−10.98	2.91
	0.00	0.00	0.00	0.00	0.00	0.12
Temperature	0.94	0.35	0.43	0.83	0.94	0.77
	0.11	0.18	0.21	0.13	0.29	0.31
	0.71	−0.01	0.00	0.57	0.36	0.14
	1.16	0.71	0.86	1.09	1.52	1.40
	0.00	0.06	0.05	0.00	0.00	0.02
Rain	−0.01	0.01	0.00	0.01	0.01	0.05
	0.02	0.02	0.01	0.01	0.02	0.03
	−0.06	−0.04	−0.03	−0.02	−0.02	−0.02
	0.03	0.05	0.03	0.03	0.05	0.12
	0.59	0.71	0.89	0.47	0.46	0.19
Num.Obs.	1161	906	1295	1277	1017	781
R2	0.348	0.342	0.341	0.460	0.280	0.253
R2 Adj.	0.317	0.307	0.310	0.435	0.244	0.212
RMSE	13.41	16.52	22.38	16.24	20.58	36.24
Std.Errors	by: city	by: city	by: city	by: city	by: city	by: city
FE: city	X	X	X	X	X	X
FE: year	X	X	X	X	X	X
FE: month	X	X	X	X	X	X

Impact of COVID-19 on crime

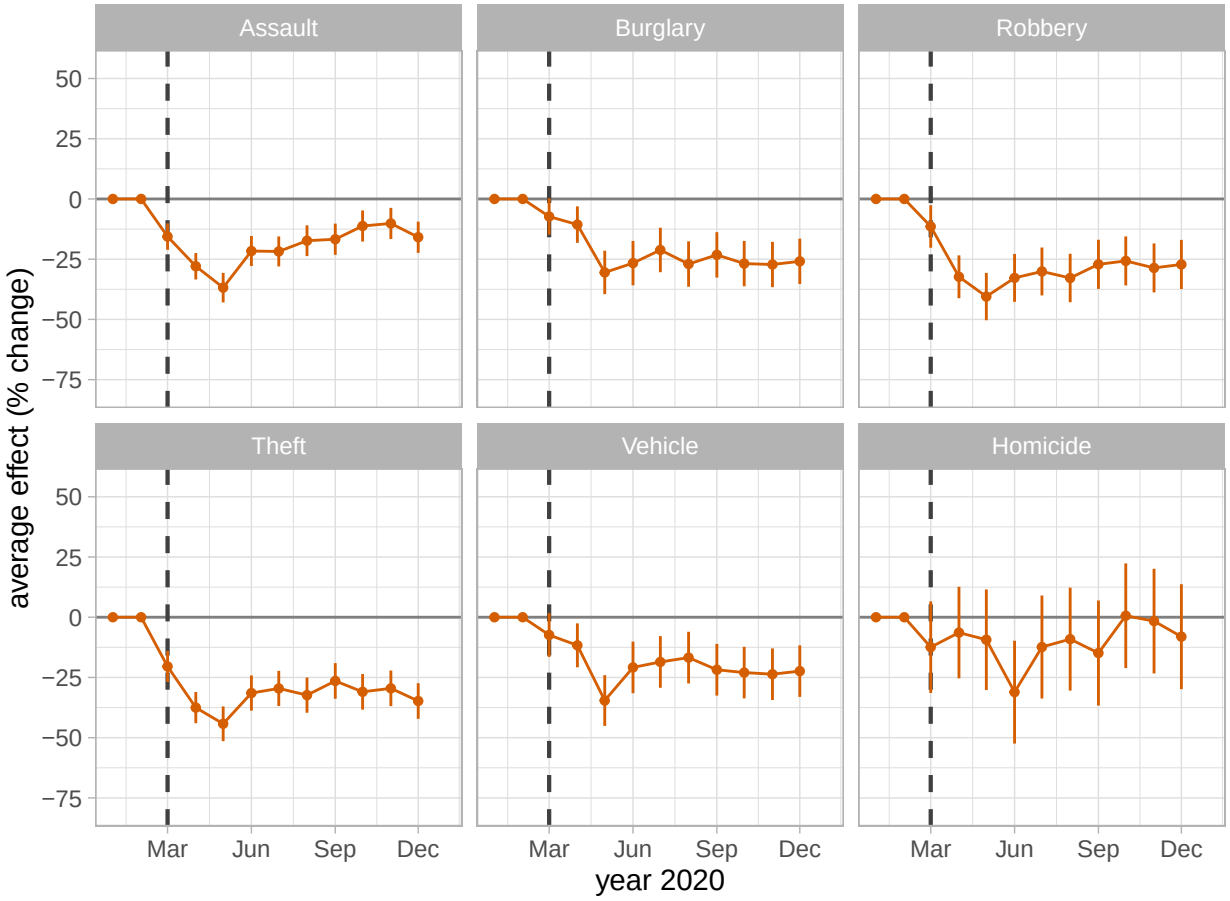

Figure 3: Average post effects, by month.

Impact of strict lockdowns on crime

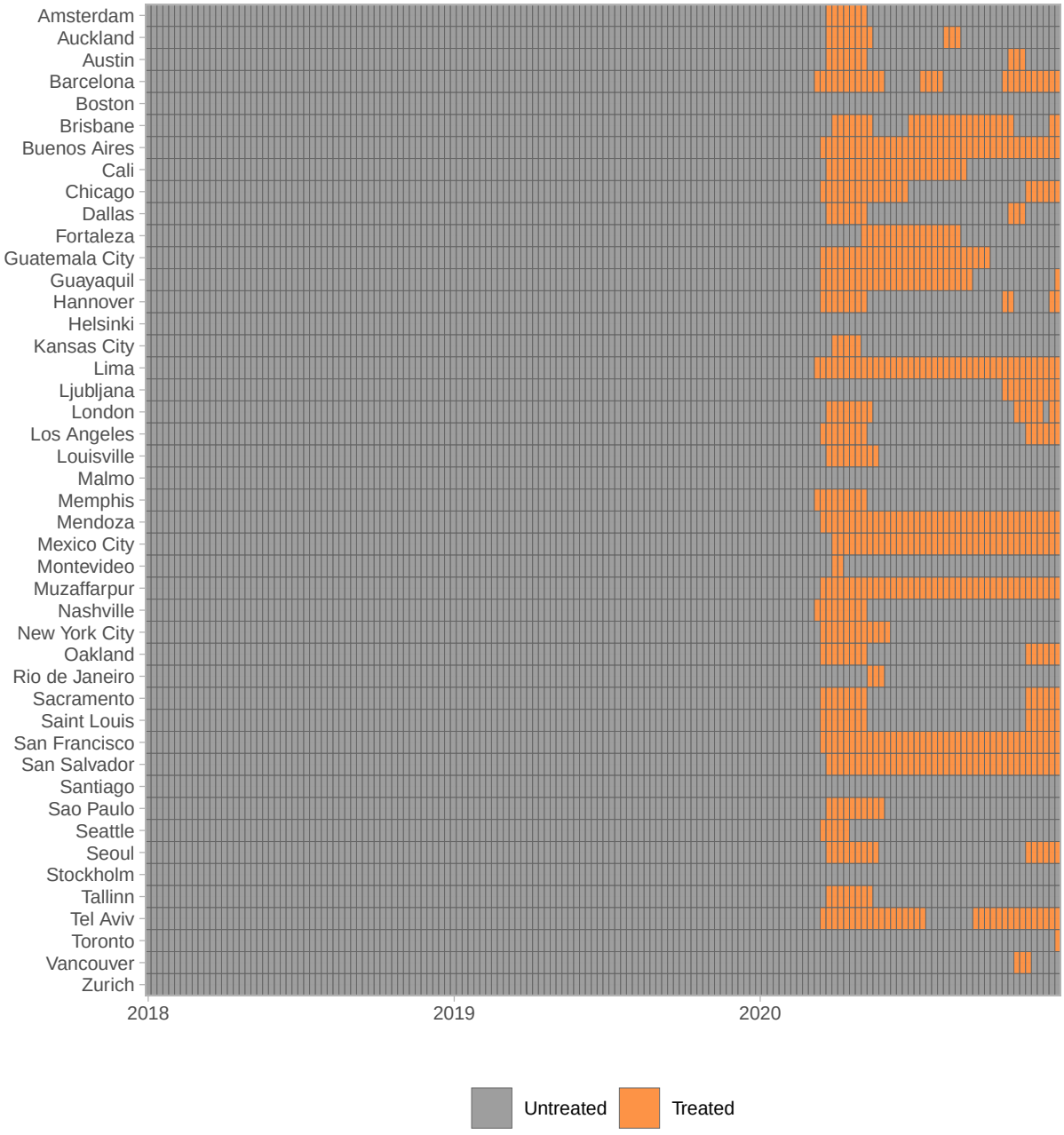

Figure 4: Stay-at-home index (weekly): require not leaving house with exceptions for daily exercise, grocery shopping, and 'essential' trips.

MC results

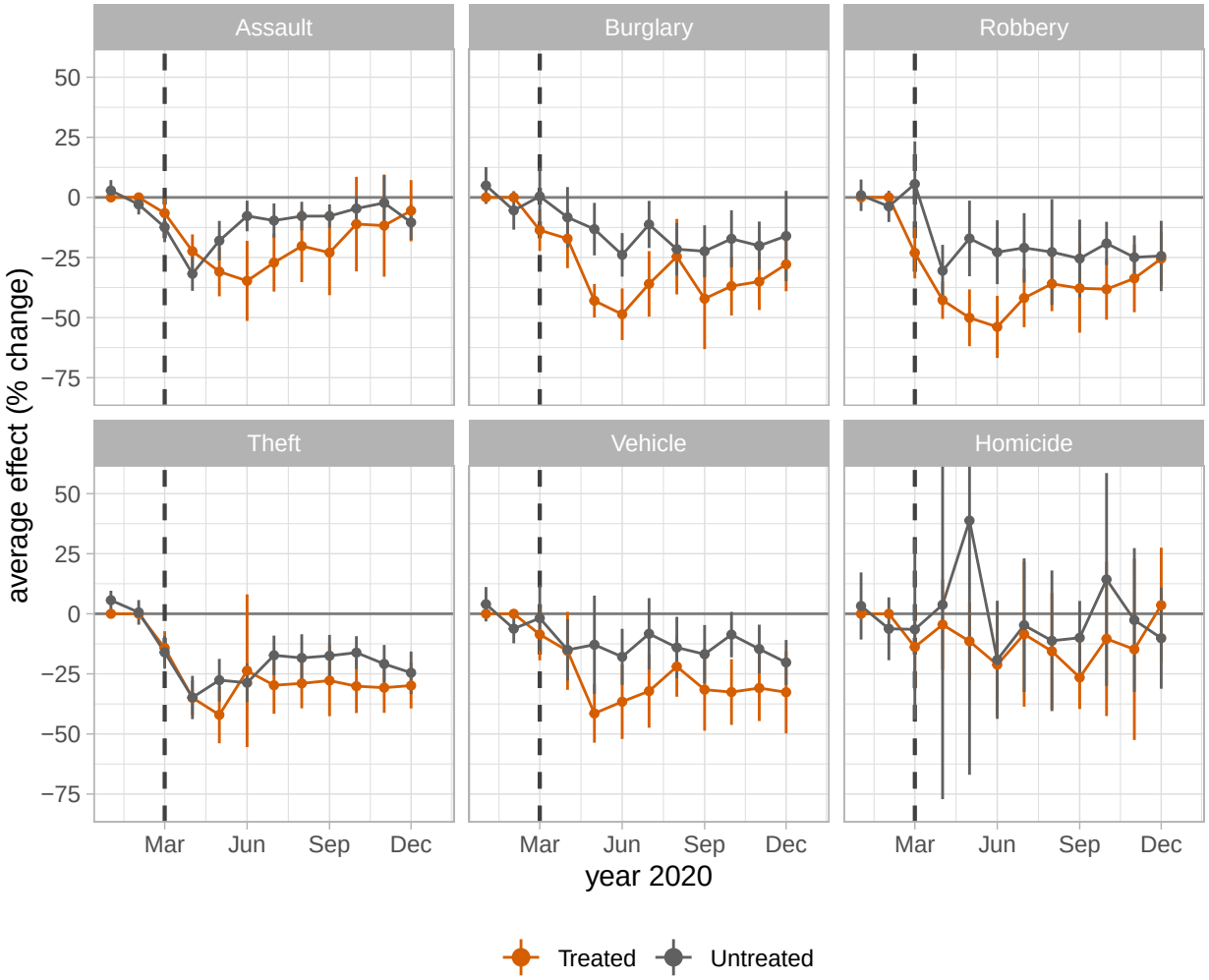

Figure 5: Average post effects for each group of cities, by month.

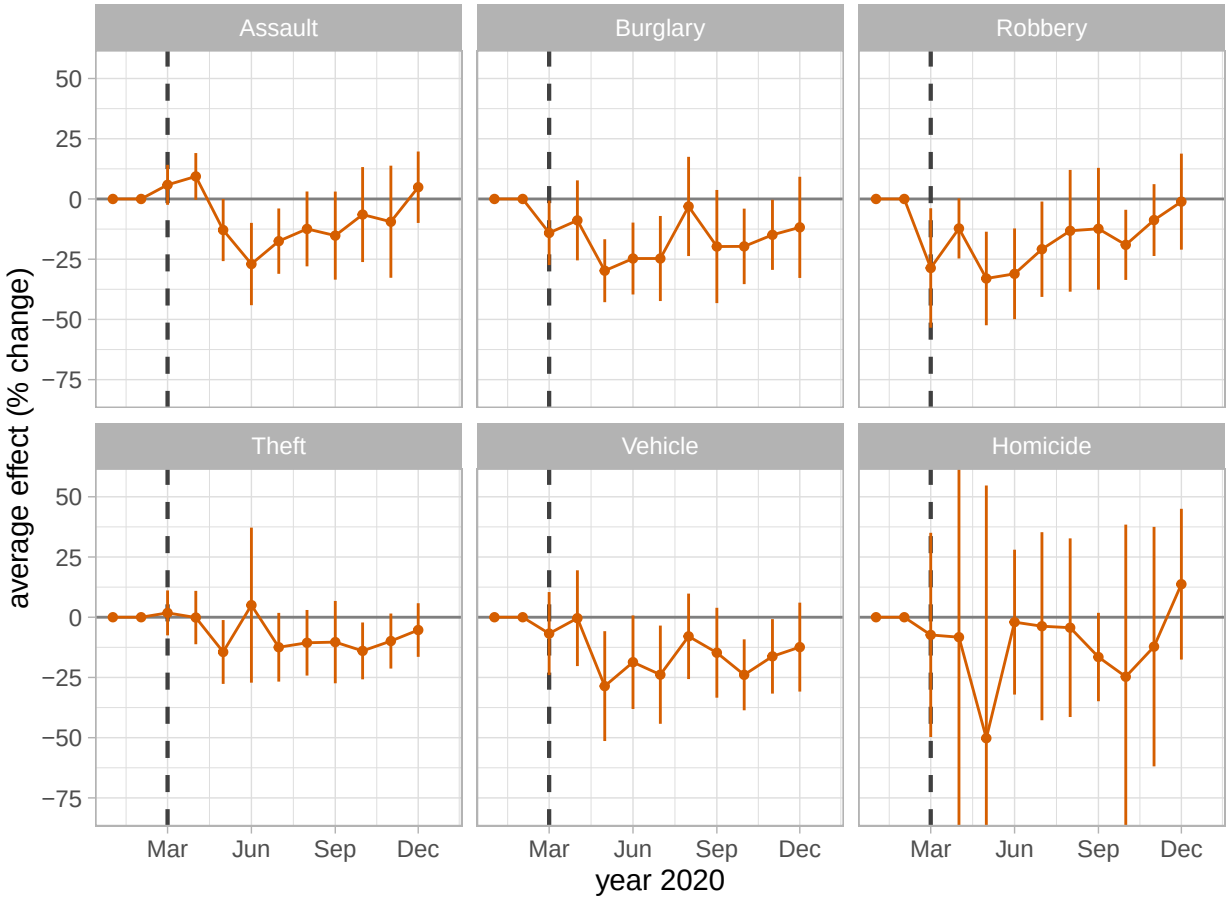

Figure 6: Average treatment effects, by month.

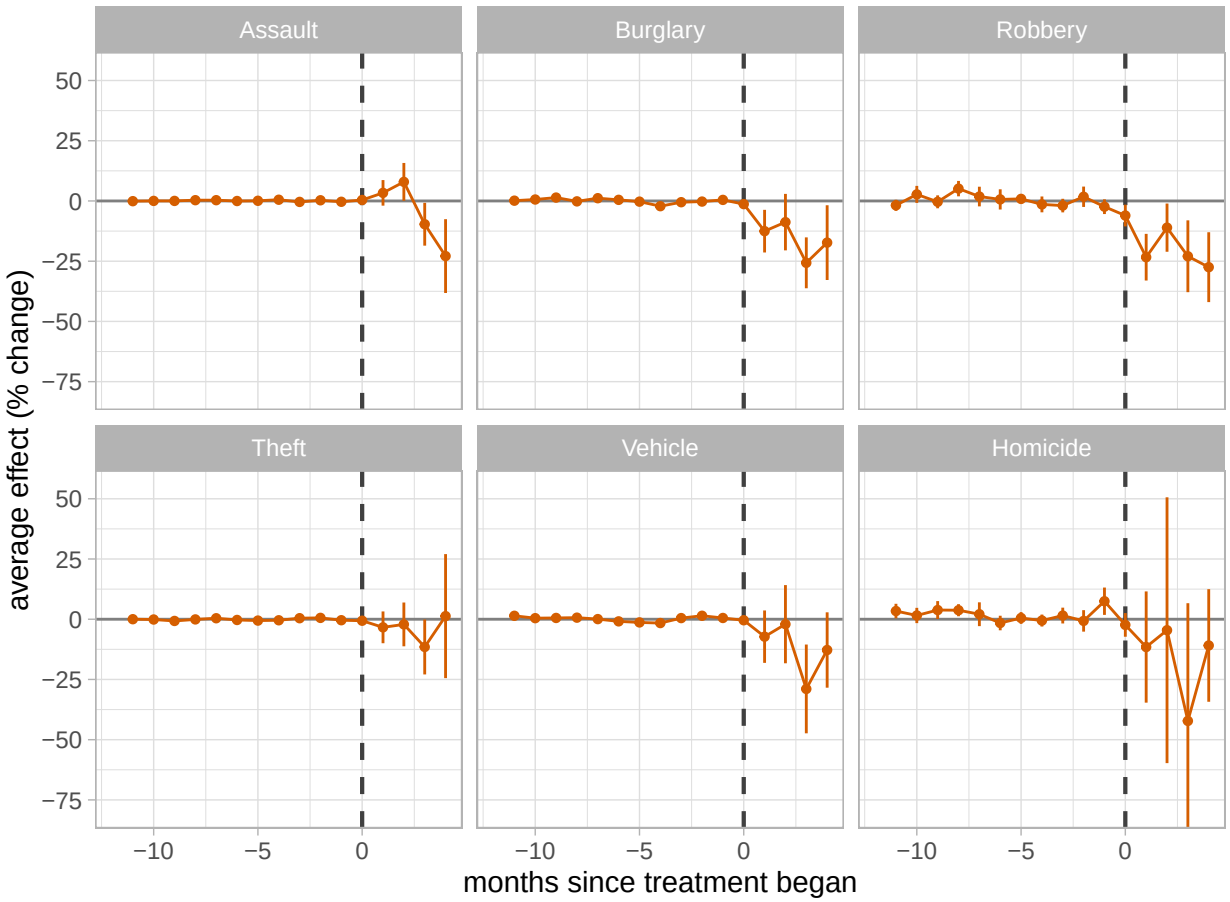

Figure 7: Average treatment effects relative to beginning of lockdown.

	Assault	Burglary	Robbery	Theft	Vehicle	Homicide
ATT.avg	-3.47	-14.92	-19.15	-5.36	-11.89	-12.95
S.E.	4.60	5.70	4.96	4.89	6.48	14.98
CI.lower	-11.04	-24.29	-27.31	-13.41	-22.54	-37.59
CI.upper	4.10	-5.55	-11.00	2.69	-1.24	11.69
p.value	0.45	0.01	0.00	0.27	0.07	0.39
Cities	38.00	31.00	42.00	41.00	33.00	25.00
Months	36.00	36.00	36.00	36.00	36.00	36.00

MC placebo tests

	Assault	Burglary	Robbery	Theft	Vehicle	Homicide
Coef	-2.46	-14.01	-5.78	2.54	6.32	-3.93
S.E.	3.20	7.69	5.41	2.23	5.96	10.23
CI.lower	-7.73	-26.66	-14.69	-1.12	-3.48	-20.76
CI.upper	2.81	-1.36	3.12	6.21	16.12	12.90
p.value	0.44	0.07	0.29	0.25	0.29	0.70
Cities	38.00	31.00	42.00	41.00	33.00	25.00
Months	36.00	36.00	36.00	36.00	36.00	36.00

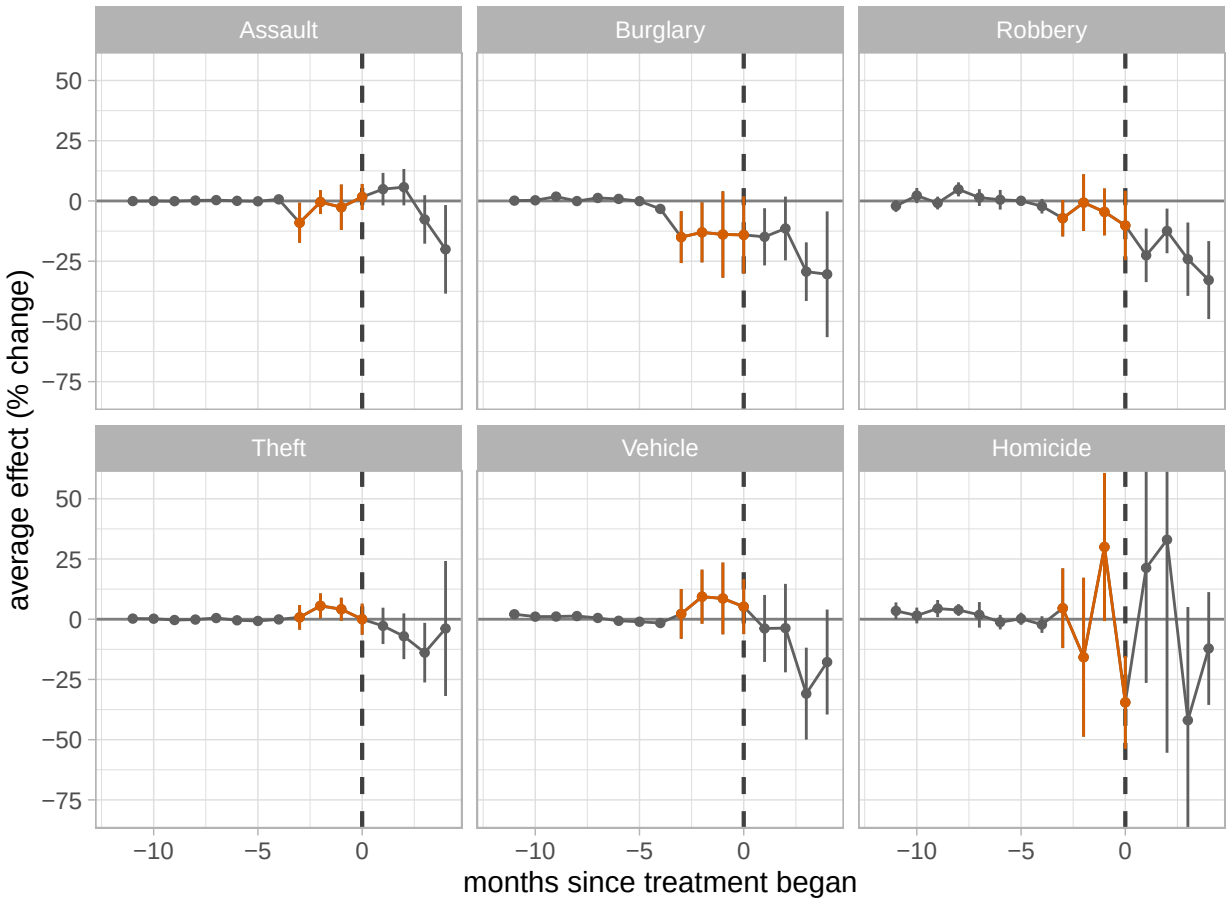

Figure 8: Placebo plot.

Additional results

Mobility indexes

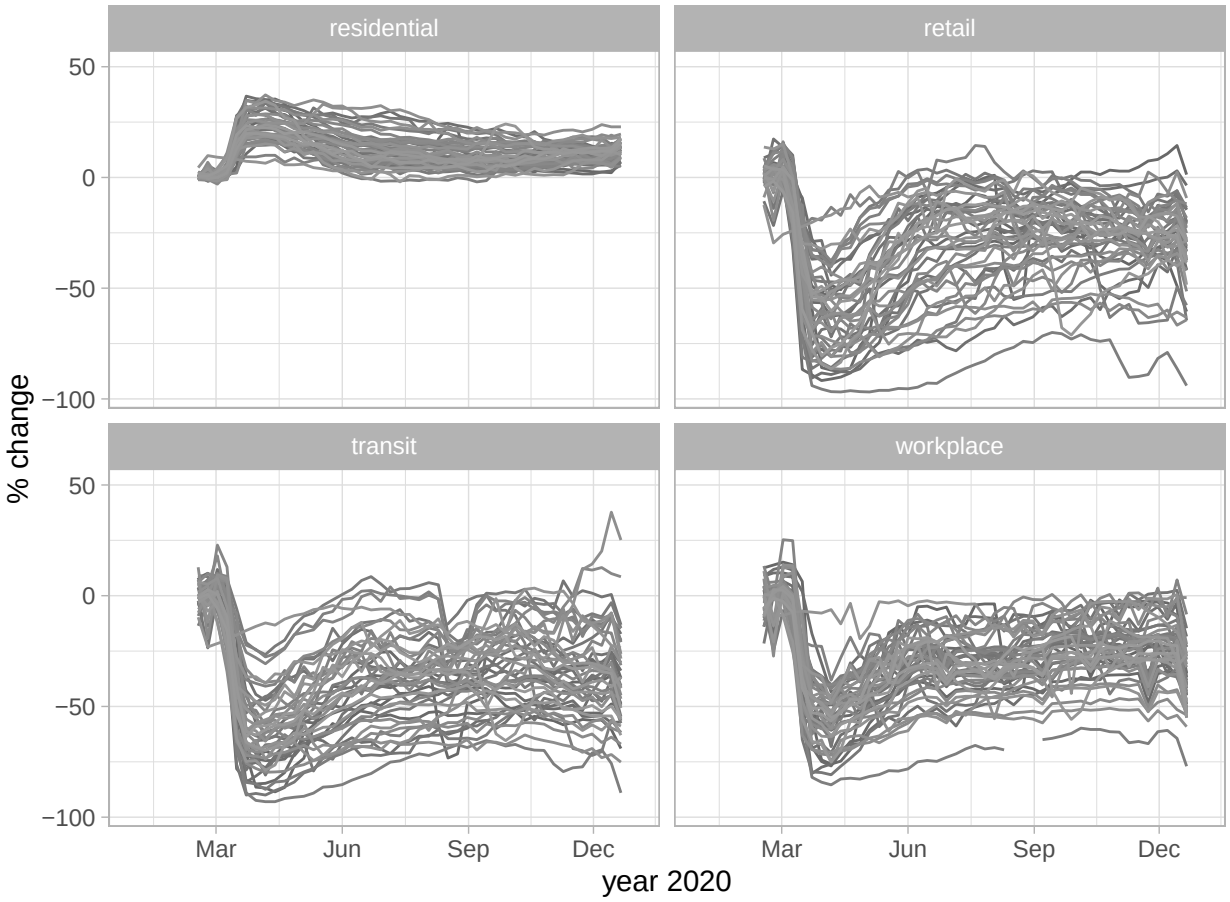

Figure 9: Google mobility indexes (weekly).

Table 2: Estimated effects of treatment on mobility.

	Residential	Retail	Transit	Workplace
Treatment 1	8.76	−25.39	−32.08	−24.01
	0.65	2.29	2.40	1.91
	0.00	0.00	0.00	0.00
Treatment 2	8.59	−22.79	−18.85	−15.54
	0.72	2.21	1.79	1.58
	0.00	0.00	0.00	0.00
Num.Obs.	1980	2025	2025	2022
R2	0.586	0.615	0.630	0.558
R2 Adj.	0.577	0.606	0.622	0.548
RMSE	5.15	14.93	13.96	12.35
Std.Errors	by: city	by: city	by: city	by: city
FE: city	X	X	X	X

```r
# number of observations for each (dynamic) ATT
number_of_obs <- rel_effect_mc |>
  select(count, time, crime) |>
  pivot_wider(names_from = crime, values_from = count)

# show results
number_of_obs
```

```
## # A tibble: 16 x 7
##     time Assault Burglary Robbery Theft Vehicle Homicide
##    <int>   <dbl>    <dbl>   <dbl> <dbl>   <dbl>    <dbl>
##  1   -11      34       26      36    36      28       22
##  2   -10      34       26      36    36      28       22
##  3    -9      34       26      36    36      28       22
##  4    -8      34       26      36    36      28       22
##  5    -7      34       26      36    36      28       22
##  6    -6      34       26      36    36      28       22
##  7    -5      34       26      36    36      28       22
##  8    -4      35       27      37    37      29       23
##  9    -3      35       27      37    37      29       23
## 10    -2      35       27      37    37      29       23
## 11    -1      36       28      38    38      30       23
## 12     0      40       32      42    42      34       23
## 13     1      41       32      43    43      34       24
## 14     2      35       28      36    36      29       21
## 15     3      18       11      20    19      13       13
## 16     4       8        4      10     9       5        8
```