Replication of the Appendix

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```r
# load libraries
library(here)
library(tidyverse)
library(fixest)
library(glmmTMB)
library(texreg)

utils:::print.sessionInfo(sessionInfo()[-8],locale = FALSE)
```

```
R version 4.4.1 (2024-06-14)
Platform: aarch64-apple-darwin20
Running under: macOS 15.6.1

Matrix products: default
BLAS:   /Library/Frameworks/R.framework/Versions/4.4-arm64/Resources/lib/libRblas.0.dylib
LAPACK: /Library/Frameworks/R.framework/Versions/4.4-arm64/Resources/lib/libRlapack.dylib;  LAPACK vers

attached base packages:
NULL

other attached packages:
 [1] texreg_1.39.4   glmmTMB_1.1.9   fixest_0.12.1   lubridate_1.9.3
 [5] forcats_1.0.0   stringr_1.5.2   dplyr_1.1.4     purrr_1.1.0
 [9] readr_2.1.5     tidyr_1.3.1     tibble_3.3.0    ggplot2_4.0.0
[13] tidyverse_2.0.0 here_1.0.1

loaded via a namespace (and not attached):
 [1] gtable_0.3.6        TMB_1.9.15          xfun_0.49
 [4] lattice_0.22-6      tzdb_0.4.0          numDeriv_2016.8-1.1
 [7] vctrs_0.6.5         tools_4.4.1         generics_0.1.4
[10] sandwich_3.1-1      pkgconfig_2.0.3     Matrix_1.7-0
[13] RColorBrewer_1.1-3  S7_0.2.0            stringmagic_1.1.2
[16] lifecycle_1.0.4     compiler_4.4.1      farver_2.1.2
[19] codetools_0.2-20    htmltools_0.5.8.1   yaml_2.3.10
[22] Formula_1.2-5       nloptr_2.1.1        pillar_1.11.1
[25] MASS_7.3-60.2       boot_1.3-30         multcomp_1.4-26
[28] nlme_3.1-164        tidyselect_1.2.1    digest_0.6.37
[31] mvtnorm_1.3-3       stringi_1.8.7       splines_4.4.1
[34] rprojroot_2.1.1     fastmap_1.2.0       grid_4.4.1
[37] cli_3.6.5           magrittr_2.0.4      survival_3.6-4
[40] TH.data_1.1-2       withr_3.0.2         dreamerr_1.4.0
[43] scales_1.4.0        timechange_0.3.0    estimability_1.5.1
```

```
[46] httr_1.4.7          rmarkdown_2.29        emmeans_1.10.1
[49] lme4_1.1-35.5        zoo_1.8-14            hms_1.1.3
[52] coda_0.19-4.1        evaluate_1.0.1        knitr_1.49
[55] mgcv_1.9-1           rlang_1.1.6           Rcpp_1.1.0
[58] xtable_1.8-4         glue_1.8.0            minqa_1.2.8
[61] rstudioapi_0.16.0    jsonlite_1.8.9        R6_2.6.1
```

Load data

```
load(here("data","panel_dat.rda"))
```

Table A.1: First Stage Results for 2SLS

```
model_vio_feols_iv <- feols(policeUC_arrest_bin ~ policeUC_count_bin
                            + policeUni_car_count_bin + pArrest_count_sw
                            + violence_escalation
                            | CACODE |
                            cl_quarter + cl_quart_sw ~ weekend + day ,
                            data=panel_dat, panel.id = ~ CACODE)

model_vio_feols_iv.t <- feols(policeUC_arrest_bin ~ policeUC_count_bin
                              + policeUni_car_count_bin + pArrest_count_sw
                              + violence_escalation + time + time2 + time3
                              | CACODE |
                              cl_quarter + cl_quart_sw ~ weekend + day ,
                              data=panel_dat, panel.id = ~ CACODE)

result_vio_1stage = etable(model_vio_feols_iv, model_vio_feols_iv.t,
                           fitstat='ivf',
                           stage = 1,
                           digits = "r3",
                           fontsize = "tiny",
                           dict=c("cl_quarter" = "Protest zone",
                                  "cl_quart_sw" = "Close to protest zone" ,
                                  "policeUC_count_bin" = "Undercover Police",
                                  "policeUni_car_count_bin" ="Uniformed Police",
                                  "pArrest_count_sw" ="Arrests nearby",
                                  "t" = "time", "t2" = "time2", "t3" = "time3",
                                  "violence_escalation" = "Protest violence",
                                  "weekend" = "Weekend", "day" ="Day"),
                           group = list("_^TimePoly" = "time"),
                           tex = T
)
result_vio_1stage
```

```
\begingroup
\centering
\tiny
\begin{tabular}{lcccc}
```

2

```
\tabularnewline \midrule \midrule
Dependent Variables: & Protest zone  & Close to protest zone & Protest zone  & Close to protest zone\
Model:              & (1)           & (2)                   & (3)           & (4)\\
\midrule
\emph{Variables}\\
Weekend             & 0.003$^{***}$ & 0.004$^{***}$         & 0.003$^{***}$ & 0.004$^{***}$\\
                    & (0.000)       & (0.000)               & (0.000)       & (0.000)\\
Day                 & 0.000         & 0.002$^{***}$         & 0.000         & 0.002$^{***}$\\
                    & (0.000)       & (0.000)               & (0.000)       & (0.000)\\
Undercover Police   & 0.163$^{***}$ & 0.013$^{***}$         & 0.164$^{***}$ & 0.013$^{***}$\\
                    & (0.011)       & (0.002)               & (0.011)       & (0.002)\\
Uniformed Police    & 0.032$^{***}$ & 0.011$^{***}$         & 0.032$^{***}$ & 0.011$^{***}$\\
                    & (0.002)       & (0.000)               & (0.002)       & (0.000)\\
Arrests nearby      & 0.160$^{***}$ & 0.201$^{***}$         & 0.156$^{***}$ & 0.196$^{***}$\\
                    & (0.016)       & (0.006)               & (0.016)       & (0.006)\\
Protest violence    & 0.038$^{*}$   & 0.010$^{***}$         & 0.038$^{*}$   & 0.010$^{***}$\\
                    & (0.022)       & (0.001)               & (0.022)       & (0.001)\\
\midrule
\emph{Fixed-effects}\\
CACODE              & Yes           & Yes                   & Yes           & Yes\\
\midrule
\emph{Fit statistics}\\
TimePoly            &               &                       & Yes           & Yes\\
F-test (1st stage)  & 43.899        & 1,854.6               & 44.661        & 1,936.7\\
\midrule \midrule
\multicolumn{5}{l}{\emph{Clustered (CACODE) standard-errors in parentheses}}\\
\multicolumn{5}{l}{\emph{Signif. Codes: ***: 0.01, **: 0.05, *: 0.1}}\\
\end{tabular}
\par\endgroup
```

Table A.2 Effects of Indoor Spaces (Logit)

```r
re.mod.logit <- glmmTMB(policeUC_arrest_bin ~
                    cl_quart_sw + cl_quarter + policeUC_count_bin
                + policeUni_car_count_bin + pArrest_count_sw
                + violence_escalation + indoorSp_protests
                + legCo  + (1 | CACODE), data = panel_dat,
                family=binomial(link="logit")) # 20 sec


re.mod.logit.t <- glmmTMB(policeUC_arrest_bin ~
                     cl_quart_sw + cl_quarter + policeUC_count_bin
                + policeUni_car_count_bin + pArrest_count_sw
                + violence_escalation + indoorSp_protests
                + legCo + time + time2 + time3 +
                   (1 | CACODE), data = panel_dat,
                family=binomial(link="logit")) # 1 min

idvs2 = c("Intercept",
        "Close to protest zone", "Protest zone",
        "Undercover Police", "Uniformed Police",
        "Arrests nearby", "Protest violence",
        "Indoor spaces", "LegCo",
```

```
            "time", "time2", "time3")

screenreg(list(re.mod.logit, re.mod.logit.t),
          include.variance=F, include.intercept = F,
          include.rsquared = F, include.loglik = F,
          include.aic = F, include.adjr = F,
          digits = 3,
          custom.model.names = c(
            "Logit", "Logit"),
          custom.coef.names = idvs2,
          stars = c(0.01, 0.05, 0.10),
          custom.gof.rows =
            list(Model = c("RE", "RE"), TimePoly = c("N", "Y")),
          omit.coef = "(time|time2|time3|(Intercept))"
          )
```

```
====================================================
                       Logit           Logit
----------------------------------------------------
Close to protest zone   -1.898 **       -2.829 ***
                        (0.906)         (0.961)
Protest zone             1.765 ***       1.775 ***
                        (0.131)         (0.132)
Undercover Police       25.872          26.203 ***
                      (2794.102)        (0.525)
Uniformed Police         0.674 ***       0.697 ***
                        (0.254)         (0.256)
Arrests nearby           2.243 ***       2.303 ***
                        (0.360)         (0.360)
Protest violence         0.516           0.473
                        (0.349)         (0.353)
Indoor spaces            0.346 **        0.335 **
                        (0.146)         (0.150)
LegCo                   -0.254          -0.225
                        (0.512)         (0.535)
----------------------------------------------------
Model                      RE              RE
TimePoly                    N               Y
Num. obs.              327248          327248
Num. groups: CACODE       452             452
====================================================
*** p < 0.01; ** p < 0.05; * p < 0.1
```

Table A.3. Effects on Undercover Policing During Covid Lockdown

```
load(here("data","panel_covid.rda"))

model_feols <- feols(policeUC_arrest_bin
                     ~ cl_quart_sw + cl_quarter + policeUC_count_bin
                 + policeUni_car_count_bin + pArrest_count_sw
```

4

```
                               | CACODE,
                               data=panel_covid, panel.id = ~ CACODE)


model_feols.t <- feols(policeUC_arrest_bin
                       ~ cl_quart_sw + cl_quarter +  policeUC_count_bin
                       + policeUni_car_count_bin + pArrest_count_sw
                       + time+ time2 + time3
                       | CACODE,
                       data=panel_covid, panel.id = ~ CACODE)

model_feols_iv <- feols(policeUC_arrest_bin ~ policeUC_count_bin
                        + policeUni_car_count_bin + pArrest_count_sw
                        | CACODE |
                        cl_quart_sw + cl_quarter ~ weekend + day,
                        data=panel_covid, panel.id = ~ CACODE)

model_feols_iv.t <- feols(policeUC_arrest_bin ~ policeUC_count_bin
                          + policeUni_car_count_bin + pArrest_count_sw
                          + time +time2 + time3
                          | CACODE |
                          cl_quart_sw + cl_quarter ~ weekend + day ,
                          data=panel_covid, panel.id = ~ CACODE)


idvs2 = c( "Closeness to protest zone", "Protest zone",
           "Undercover Police", "Uniformed Police",
           "Arrests nearby",
         "time", "time2", "time3",
         "Predicted closeness to protest zone",
         "Predicted protest zone")

screenreg(list(model_feols, model_feols.t,
            model_feols_iv, model_feols_iv.t),
        include.variance=F, include.intercept = F,
        include.rsquared = F, include.loglik = F,
        include.aic = F, include.adjr = F,
        digits = 4,
        stars = c(0.01, 0.05, 0.10),
        custom.model.names = c(
          "OLS", "OLS",
          "2SLS","2SLS"),
        custom.coef.names = idvs2,
        custom.gof.rows = list(Model = c("FE", "FE", "FE", "FE"), TimePoly = c("N", "Y", "N", "Y")),
        omit.coef = "(time|time2|time3|(Intercept))"
        )
```

```
===============================================================================================
                                  OLS             OLS             2SLS            2SLS
-----------------------------------------------------------------------------------------------
Closeness to protest zone        0.1343          0.1417
                                (0.1227)        (0.1250)
```

```
Protest zone                         0.1329 ***      0.1328 ***
                                    (0.0480)        (0.0480)
Undercover Police                    0.0835 ***      0.0835 ***      0.0100         0.0095
                                    (0.0185)        (0.0184)        (0.0326)       (0.0317)
Uniformed Police                    -0.0014 **      -0.0014 **     -0.0064 **     -0.0065 **
                                    (0.0007)        (0.0007)        (0.0031)       (0.0031)
Arrests nearby                       0.2409 ***      0.2457 ***      0.0795         0.0805
                                    (0.0907)        (0.0922)        (0.2956)       (0.2252)
Predicted closeness to protest zone                                -1.0871        -1.0962
                                                                    (2.1229)       (1.5801)
Predicted protest zone                                              1.5161 **      1.5250 **
                                                                    (0.7702)       (0.7285)
----------------------------------------------------------------------------------------------
Model                                     FE              FE              FE             FE
TimePoly                                   N               Y               N              Y
Num. obs.                              86784           86784           86784          86784
Num. groups: CACODE                      452             452             452            452
==============================================================================================
*** p < 0.01; ** p < 0.05; * p < 0.1
```

Table A.4. Effects of Indoor Spaces on Arrests by Undercover Police (with radius)

```r
# 300m
re_300m.mod.indoorSp <- glmmTMB(
  indoorSp_UCArrests300m
  ~ cl_quart_sw + cl_quarter + policeUC_count_bin
  + policeUni_car_count_bin + pArrest_count_sw
  + violence_escalation  + indoorSp_protests +
    legCo + (1 | CACODE), data = panel_dat, family="gaussian")


re_300m.mod.t.indoorSp <- glmmTMB(
  indoorSp_UCArrests300m
  ~ cl_quart_sw + cl_quarter + policeUC_count_bin
  + policeUni_car_count_bin + pArrest_count_sw
  + violence_escalation  + indoorSp_protests +
    legCo + time + time2 + time3 + (1 | CACODE)
  , data = panel_dat, family="gaussian")


# 200m
re_200m.mod.indoorSp <- glmmTMB(
  indoorSp_UCArrests200m
  ~ cl_quart_sw + cl_quarter +  policeUC_count_bin
  + policeUni_car_count_bin + pArrest_count_sw
  + violence_escalation  + indoorSp_protests +
    legCo + (1 | CACODE), data = panel_dat, family="gaussian")


re_200m.mod.t.indoorSp <- glmmTMB(
  indoorSp_UCArrests200m
  ~ cl_quart_sw + cl_quarter + policeUC_count_bin +
    policeUni_car_count_bin + pArrest_count_sw +
    violence_escalation  + indoorSp_protests +
    legCo + time + time2 + time3 + (1 | CACODE),
  data = panel_dat, family="gaussian")


# 100m
re_100m.mod.indoorSp <- glmmTMB(
```

```
  indoorSp_UCArrests100m
  ~ cl_quart_sw + cl_quarter +  policeUC_count_bin +
    policeUni_car_count_bin + pArrest_count_sw +
    violence_escalation  + indoorSp_protests +
    legCo + (1 | CACODE), data = panel_dat, family="gaussian")


re_100m.mod.t.indoorSp <- glmmTMB(
  indoorSp_UCArrests100m
  ~ cl_quart_sw + cl_quarter + policeUC_count_bin +
    policeUni_car_count_bin + pArrest_count_sw +
    violence_escalation + indoorSp_protests +
    legCo + time + time2 + time3 + (1 | CACODE),
  data = panel_dat, family="gaussian")


idvs = c( "Intercept", "Close to protest zone",
         "Protest zone",
         "Undercover Police", "Uniformed Police",
         "Arrests nearby", "Protest violence",
         "Indoor spaces", "LegCo",
         "time", "time2", "time3")

screenreg(list(re_300m.mod.indoorSp, re_300m.mod.t.indoorSp,
               re_200m.mod.indoorSp, re_200m.mod.t.indoorSp,
               re_100m.mod.indoorSp, re_100m.mod.t.indoorSp),
              include.variance=F, include.intercept = F,
              custom.coef.names = idvs,
              digits = 4,
              include.loglik = FALSE,
              include.aic = FALSE,
              include.rsquared = FALSE,
              include.adjrs = FALSE,
              custom.model.names = c(
                "300m", "300m",
                "200m","200m",
                "100m", "100m"),
              stars = c(0.01, 0.05, 0.10),
              custom.gof.rows =
                list(Model = c("RE", "RE","RE", "RE", "RE",  "RE"),
                TimePoly = c("N", "Y", "N", "Y", "N", "Y")),
              caption = "Effects of Indoor Spaces on Arrests by Undercover Police (with radius)",
              omit.coef = "(time|time2|time3|(Intercept))"
)
```

	300m	300m	200m	200m	100m	100m
Close to protest zone	-0.0421 ***	-0.0426 ***	-0.0253 ***	-0.0256 ***	-0.0089 ***	-0.0106 ***
	(0.0023)	(0.0023)	(0.0019)	(0.0019)	(0.0013)	(0.0013)
Protest zone	0.0315 ***	0.0315 ***	0.0232 ***	0.0232 ***	0.0116 ***	0.0115 ***
	(0.0005)	(0.0005)	(0.0005)	(0.0005)	(0.0003)	(0.0003)
Undercover Police	0.0941 ***	0.0942 ***	0.0658 ***	0.0658 ***	0.0280 ***	0.0280 ***
	(0.0006)	(0.0006)	(0.0005)	(0.0005)	(0.0003)	(0.0003)
Uniformed Police	-0.0012 ***	-0.0012 ***	-0.0008 ***	-0.0007 ***	-0.0002 **	-0.0003 ***
	(0.0002)	(0.0002)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Arrests nearby	0.0318 ***	0.0319 ***	0.0163 ***	0.0164 ***	0.0014 **	0.0011 *
	(0.0012)	(0.0012)	(0.0010)	(0.0010)	(0.0007)	(0.0007)
Protest violence	0.0051 ***	0.0051 ***	0.0043 ***	0.0043 ***	0.0035 ***	0.0036 ***
	(0.0010)	(0.0010)	(0.0008)	(0.0008)	(0.0005)	(0.0005)
Indoor spaces	0.0005 ***	0.0005 ***	0.0005 ***	0.0005 ***	0.0003 ***	0.0003 **
	(0.0002)	(0.0002)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
LegCo	0.0032 **	0.0032 **	0.0025 **	0.0025 **	0.0010	0.0019 **
	(0.0014)	(0.0014)	(0.0012)	(0.0012)	(0.0008)	(0.0009)
Model	RE	RE	RE	RE	RE	RE

```
TimePoly                        N              Y              N              Y              N              Y
Num. obs.                  327248         327248         327248         327248         327248         327248
Num. groups: CACODE           452            452            452            452            452            452
=====================================================================================================================
*** p < 0.01; ** p < 0.05; * p < 0.1
```

Table A.5. Effects of Outdoor Parks on Arrests by Undercover Police (with radius)

```r
# 1. 1000m
re_park1000m <- glmmTMB(
  policeUC_arrest_bin_park1000m
  ~  cl_quart_sw + cl_quarter +
    policeUC_count_bin +  policeUni_car_count_bin +
    pArrest_count_sw + bldg_park_bin + legCo +
    (1 | CACODE), data = panel_dat, family="gaussian")

re_t_park1000m <- glmmTMB(
  policeUC_arrest_bin_park1000m
  ~  cl_quart_sw + cl_quarter + policeUC_count_bin +
    policeUni_car_count_bin + pArrest_count_sw +
    bldg_park_bin + legCo + time + time2 + time3 + (1 | CACODE),
  data = panel_dat, family="gaussian")


# 2. 500m
re_park500m <- glmmTMB(
  policeUC_arrest_bin_park500m
  ~  cl_quart_sw + cl_quarter +  policeUC_count_bin +
    policeUni_car_count_bin + pArrest_count_sw +
    bldg_park_bin + legCo + (1 | CACODE),
  data = panel_dat, family="gaussian")

re_t_park500m <- glmmTMB(
  policeUC_arrest_bin_park500m
  ~  cl_quart_sw + cl_quarter +  policeUC_count_bin +
    policeUni_car_count_bin + pArrest_count_sw + bldg_park_bin
  + legCo + time + time2 + time3 + (1 | CACODE),
  data = panel_dat, family="gaussian")

# 3. 100m
re_park100m <- glmmTMB(
  policeUC_arrest_bin_park100m
  ~  cl_quart_sw + cl_quarter +  policeUC_count_bin +  policeUni_car_count_bin + pArrest_count_sw + bldg

idvs = c("Intercept",
        "Protest zone", "Close to protest zone",
        "Undercover Police", "Uniformed Police",
        "Arrests nearby",
        "Outdoor parks", "LegCo",
        "time", "time2", "time3")

screenreg(list(re_park1000m, re_t_park1000m,
              re_park500m,  re_t_park500m,
```

```
            re_park100m ),
      include.loglik = FALSE,
      include.aic = FALSE,
      include.rsquared = FALSE,
      include.adjrs = FALSE,
      custom.coef.names = idvs,
      custom.model.names = c(
        "1000m", "1000m",
        "500m", "500m",
        "100m"),
      stars = c(0.01, 0.05, 0.10),
      include.variance=F, include.intercept = F,
      custom.gof.rows =
        list(Model = c("RE", "RE", "RE", "RE", "RE"),
             TimePoly = c("N", "Y", "N", "Y","N")),
      caption = "Effects of Outdoor Parks on Arrests by Undercover Police (with radius)",
      omit.coef = "(time|time2|time3|(Intercept))",
      digits = 3)
```

	1000m	1000m	500m	500m	100m
Protest zone	-0.036 ***	-0.037 ***	-0.018 ***	-0.018 ***	-0.000
	(0.002)	(0.002)	(0.002)	(0.002)	(0.000)
Close to protest zone	0.037 ***	0.037 ***	0.019 ***	0.019 ***	0.000 **
	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Undercover Police	0.112 ***	0.112 ***	0.046 ***	0.046 ***	0.001 ***
	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Uniformed Police	-0.002 ***	-0.002 ***	-0.001 ***	-0.001 ***	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Arrests nearby	0.033 ***	0.034 ***	0.015 ***	0.015 ***	-0.000 *
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)
Outdoor parks	0.000	0.000	0.000 ***	0.000 ***	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LegCo	0.014 ***	0.014 ***	0.023 ***	0.023 ***	0.001 ***
	(0.002)	(0.002)	(0.001)	(0.001)	(0.000)
Model	RE	RE	RE	RE	RE
TimePoly	N	Y	N	Y	N
Num. obs.	327248	327248	327248	327248	327248
Num. groups: CACODE	452	452	452	452	452

*** p < 0.01; ** p < 0.05; * p < 0.1

Table A.6. Effects on Undercover Policing (3 hour window)

```
load(here("data","panel_dat3hr.rda"))

model_vio_feols <-
  feols(policeUC_arrest_bin ~ cl_miniquart_sw + cl_miniquarter
                      + policeUC_count_bin + policeUni_car_count_bin
                      + pArrest_count_sw + violence_escalation
                      | CACODE,
                data=panel_dat3hr, panel.id = ~ CACODE)
```

```r
model_vio_feols.t <-
  feols(policeUC_arrest_bin ~ cl_miniquart_sw +  cl_miniquarter +
      + policeUC_count_bin + policeUni_car_count_bin +
          pArrest_count_sw + violence_escalation + time + time2 + time3
                      | CACODE,
                    data=panel_dat3hr, panel.id = ~ CACODE)


model_vio_feols_iv <-
  feols(policeUC_arrest_bin ~ policeUC_count_bin +
                    policeUni_car_count_bin + pArrest_count_sw +
                    violence_escalation
                    | CACODE |
        cl_miniquart_sw + cl_miniquarter ~ weekend + day ,
                    data=panel_dat3hr, panel.id = ~ CACODE)

model_vio_feols_iv.t <-
  feols(policeUC_arrest_bin ~ policeUC_count_bin + policeUni_car_count_bin
        + pArrest_count_sw + violence_escalation + time + time2 + time3
                    | CACODE |
        cl_miniquart_sw + cl_miniquarter ~ weekend + day ,
                    data=panel_dat3hr, panel.id = ~ CACODE)

re_vio.mod <- glmmTMB(policeUC_arrest_bin ~ cl_miniquart_sw + cl_miniquarter +
                    policeUC_count_bin + policeUni_car_count_bin + pArrest_count_sw +
                    violence_escalation + indoorSp_protests + legCo +
                    (1 | CACODE), data = panel_dat3hr, family="gaussian")


re_vio.mod.t <- glmmTMB(policeUC_arrest_bin ~ cl_miniquart_sw + cl_miniquarter +
                    policeUC_count_bin + policeUni_car_count_bin + pArrest_count_sw
                    + violence_escalation + indoorSp_protests + legCo + time + time2 + time3
                    + (1 | CACODE), data = panel_dat3hr, family="gaussian")



idvs = c("Closeness to protest zone",  "Protest zone",
        "Undercover Police", "Uniformed Police",
        "Arrests nearby", "Protest violence",
        "time", "time2", "time3",
        "Predicted closeness to protest zone",
        "Predicted protest zone",
        "Intercept",
        "Indoor spaces", "LegCo"
)

screenreg(list(model_vio_feols, model_vio_feols.t,
            model_vio_feols_iv,model_vio_feols_iv.t,
            re_vio.mod, re_vio.mod.t),
        include.variance=F, include.intercept = F,
        include.rsquared = F, include.loglik = F,
        include.aic = F, include.adjr = F,
        digits = 4,
        stars = c(0.01, 0.05, 0.10),
        custom.model.names = c(
          "OLS", "OLS",
          "2SLS","2SLS",
          "OLS", "OLS"),
        custom.coef.names = idvs,
        custom.gof.rows = list(Model = c("FE", "FE", "FE", "FE", "RE", "RE"),
                        TimePoly = c("N", "Y", "N", "Y","N", "Y")),
        omit.coef = "(time|time2|time3|(Intercept))"
)
```

	OLS	OLS	2SLS	2SLS	OLS	OLS
Closeness to protest zone	-0.0462 ***	-0.0467 ***			-0.0467 ***	-0.0468 ***
	(0.0103)	(0.0103)			(0.0021)	(0.0021)
Protest zone	0.0459 ***	0.0458 ***			0.0461 ***	0.0457 ***
	(0.0065)	(0.0065)			(0.0005)	(0.0005)
Undercover Police	0.1572 ***	0.1572 ***	0.1222 ***	0.1219 ***	0.1575 ***	0.1582 ***
	(0.0103)	(0.0103)	(0.0145)	(0.0146)	(0.0005)	(0.0005)
Uniformed Police	-0.0014 ***	-0.0014 ***	-0.0079 ***	-0.0079 ***	-0.0013 ***	-0.0015 ***
	(0.0004)	(0.0004)	(0.0023)	(0.0023)	(0.0001)	(0.0001)
Arrests nearby	0.0251 ***	0.0253 ***	0.0206 ***	0.0209 ***	0.0251 ***	0.0242 ***
	(0.0067)	(0.0067)	(0.0068)	(0.0068)	(0.0008)	(0.0008)
Protest violence	0.0071	0.0071	0.0004	0.0004	0.0069 ***	0.0061 ***
	(0.0058)	(0.0058)	(0.0032)	(0.0032)	(0.0006)	(0.0006)
Predicted closeness to protest zone			-0.2039 ***	-0.2057 ***		
			(0.0559)	(0.0560)		
Predicted protest zone			0.3034 ***	0.3054 ***		
			(0.0847)	(0.0850)		
Indoor spaces					0.0003 ***	0.0204
					(0.0001)	
LegCo					0.0022 ***	-0.0301 ***
					(0.0008)	(0.0092)
Model	FE	FE	FE	FE	RE	RE
TimePoly	N	Y	N	Y	N	Y
Num. obs.	654496	654496	654496	654496	654496	654496
Num. groups: CACODE	452	452	452	452	452	452

*** p < 0.01; ** p < 0.05; * p < 0.1

Table A.7. Effects on Undercover Policing (1km grid, quarter-day level)

```r
load(here("data","panel_dat6hr_grid.rda"))

model_vio_feols <-
  feols(policeUC_arrest_bin ~ cl_quart_sw + cl_quarter + policeUC_count_bin +
                          policeUni_car_count_bin + pArrest_count_sw +
                          violence_escalation
                        | grid_id,
                          data=panel_dat6hr_grid, panel.id = ~ grid_id)

model_vio_feols.t <-
  feols(policeUC_arrest_bin ~ cl_quart_sw + cl_quarter + policeUC_count_bin +
                          policeUni_car_count_bin + pArrest_count_sw +
                          violence_escalation +
                          time + time2 + time3
                        | grid_id,
                          data=panel_dat6hr_grid, panel.id = ~ grid_id)

model_vio_feols_iv <- feols(policeUC_arrest_bin ~ policeUC_count_bin +
                          policeUni_car_count_bin + pArrest_count_sw +
                          violence_escalation
                        | grid_id | cl_quart_sw + cl_quarter ~ weekend + day,
                          data=panel_dat6hr_grid, panel.id = ~ grid_id)

model_vio_feols_iv.t <-
  feols(policeUC_arrest_bin ~ policeUC_count_bin +
                          policeUni_car_count_bin + pArrest_count_sw +
                          violence_escalation +
                          time + time2 + time3
                        | grid_id | cl_quart_sw + cl_quarter ~ weekend + day,
                          data=panel_dat6hr_grid, panel.id = ~ grid_id)

idvs = c( "Closeness to protest zone",  "Protest zone","Undercover Police",
        "Uniformed Police", "Arrests nearby", "Protest violence",
        "time", "time2", "time3",
        "Predicted closeness to protest zone", "Predicted protest zone"
)

screenreg(list(model_vio_feols, model_vio_feols.t,
            model_vio_feols_iv,model_vio_feols_iv.t),
        include.variance=F, include.intercept = F,
        include.rsquared = F, include.loglik = F,
        include.aic = F, include.adjr = F,
        digits = 4,
        stars = c(0.01, 0.05, 0.10),
        omit.coef = "(time|time2|time3|(Intercept))",
        custom.model.names = c(
          "OLS", "OLS",
          "2SLS","2SLS"),
        custom.coef.names = idvs,
        custom.gof.rows = list(Model = c("FE", "FE", "FE", "FE"),
                            TimePoly = c("N", "Y", "N", "Y")))
```

	OLS	OLS	2SLS	2SLS
Closeness to protest zone	-0.0865 **	-0.0862 **		
	(0.0344)	(0.0345)		
Protest zone	0.0670 ***	0.0669 ***		
	(0.0107)	(0.0107)		
Undercover Police	0.2062 ***	0.2061 ***	0.1362 ***	0.1361 ***
	(0.0156)	(0.0156)	(0.0224)	(0.0225)
Uniformed Police	-0.0035 ***	-0.0035 ***	-0.0162 ***	-0.0162 ***
	(0.0008)	(0.0008)	(0.0033)	(0.0034)
Arrests nearby	0.0883 ***	0.0886 ***	0.0375 **	0.0379 **
	(0.0212)	(0.0213)	(0.0169)	(0.0167)
Protest violence	0.0354 ***	0.0354 ***	-0.0219	-0.0220
	(0.0076)	(0.0076)	(0.0169)	(0.0169)
Predicted closeness to protest zone			-0.2847 ***	-0.2864 ***
			(0.0686)	(0.0684)
Predicted protest zone			0.5119 ***	0.5130 ***
			(0.1014)	(0.1017)
Model	FE	FE	FE	FE
TimePoly	N	Y	N	Y
Num. obs.	1225008	1225008	1225008	1225008
Num. groups: grid_id	1692	1692	1692	1692

*** p < 0.01; ** p < 0.05; * p < 0.1

Table A.8. Effects of Indoor Spaces (1km grid, quarter-day level)

```r
re.mod.logit <- glmmTMB(policeUC_arrest_bin ~ cl_quart_sw + cl_quarter +
                      policeUC_count_bin + policeUni_car_count_bin +
                      pArrest_count_sw + violence_escalation +
                      indoorSp_protests + legCo + (1 | grid_id),
                    data = panel_dat6hr_grid, family=binomial(link="logit"))
```

```
re.mod.logit.t <-
  glmmTMB(policeUC_arrest_bin ~ cl_quart_sw + cl_quarter +
          policeUC_count_bin + policeUni_car_count_bin +
          pArrest_count_sw + violence_escalation + indoorSp_protests +
          legCo + time + time2 + time3 + (1 | grid_id)
        , data = panel_dat6hr_grid, family=binomial(link="logit"))


idvs2 = c("Intercept",
          "Closeness to protest zone",
          "Protest zone","Undercover Police",
          "Uniformed Police", "Arrests nearby",
          "Protest violence",
          "Indoor spaces", "LegCo",
          "time", "time2", "time3")

screenreg(list(re.mod.logit, re.mod.logit.t),
          include.variance=F, include.intercept = F,
          include.rsquared = F, include.loglik = F,
          include.aic = F, include.adjr = F,
          digits = 3,
          omit.coef = "(time|time2|time3|(Intercept))",
          custom.model.names = c(
            "Logit", "Logit"),
          stars = c(0.01, 0.05, 0.10),
          custom.coef.names = idvs2,
          custom.gof.rows = list(Model = c("RE", "RE"), TimePoly = c("N", "Y")))
```

```
===========================================================
                             Logit              Logit
-----------------------------------------------------------
Closeness to protest zone      2.269             -0.122
                              (3.206)
Protest zone                   1.448 ***          1.434
                              (0.145)
Undercover Police             27.428             52.502
                           (3402.345)
Uniformed Police               0.566 **           0.590
                              (0.286)
Arrests nearby                 5.294 ***          5.554
                              (0.974)
Protest violence               0.797 ***          0.833
                              (0.200)
Indoor spaces                  0.398 *            0.399
                              (0.208)
LegCo                         -0.336             -0.317
                              (0.753)
-----------------------------------------------------------
Model                            RE                 RE
TimePoly                          N                  Y
Num. obs.                    1225008            1225008
Num. groups: grid_id            1692               1692
```

==
*** p < 0.01; ** p < 0.05; * p < 0.1

## Figure A.1. Distribution of Police Arrests During the Day of Week

```
load(here("data","police_vio.rda"))

# Arrest day
police_arrest = police_vio %>% dplyr::select("date_formatted","day","arrested")
police_arrest_dat = police_arrest %>% filter(arrested >0)
arrest_counts = police_arrest_dat$day %>% table %>% as.data.frame()
colnames(arrest_counts) = c("Day", "Frequency")

ord <- c("Monday","Tuesday","Wednesday","Thursday", "Friday", "Saturday", "Sunday")

arrest_counts$Day <- factor(arrest_counts$Day,levels=ord)

g1 = ggplot(arrest_counts, aes(x=Day, y=Frequency)) +
  geom_bar(stat = "identity") + theme_bw() + ylab("Police Arrest Days") +
  theme(text = element_text(size = 10))
g1
```
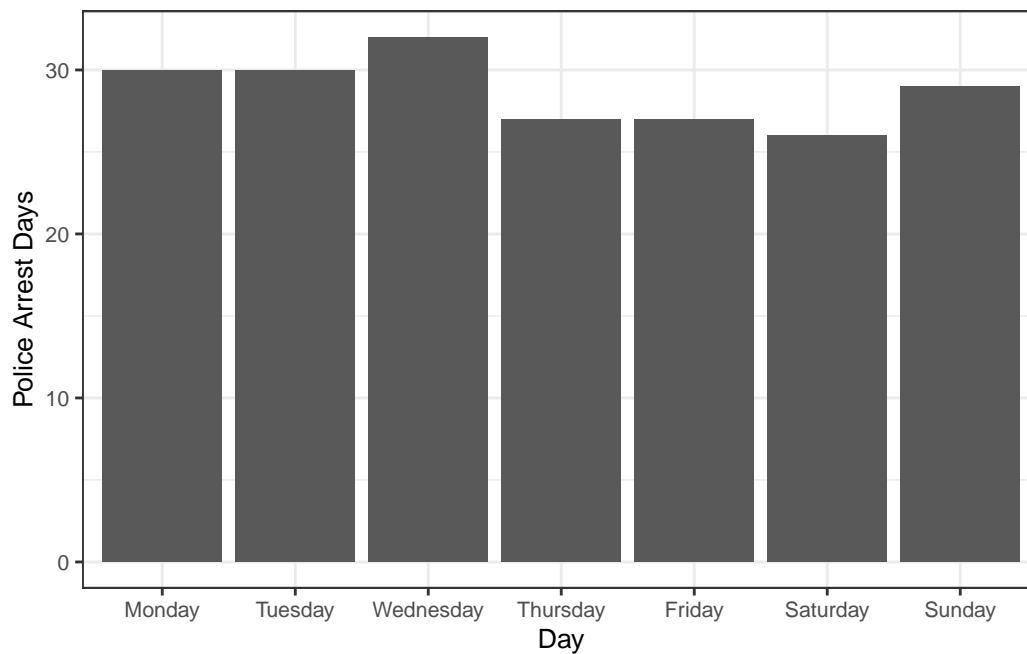

Compiling this file will take roughly 15 minute due to the convergence time needed for the `glmmTMB` package.