```
================================================================================
Log Path: ./log/isq_log_v1.log
Program Path: /Users/andrewlugg/Dropbox/sc_project/isq_rr/
final_version_files/isq_log_scriptv1.R
Working Directory: /Users/andrewlugg/Dropbox/sc_project/isq_rr/
final_version_files
User Name: andrewlugg
R Version: 4.2.1 (2022-06-23)
Machine: LA-2110649 arm64
Operating System: Darwin 21.6.0 Darwin Kernel Version 21.6.0: Thu Sep
29 20:13:46 PDT 2022; root:xnu-8020.240.7~1/RELEASE_ARM64_T8101
Base Packages: stats graphics grDevices utils datasets methods base
Other Packages: tidylog_1.0.2 logr_1.3.5 MASS_7.3-57 stargazer_5.2.3
readxl_1.4.0 forcats_0.5.1 stringr_1.4.0 dplyr_1.0.9 purrr_0.3.4
readr_2.1.2 tidyr_1.2.0 tibble_3.1.8 ggplot2_3.3.6 tidyverse_1.3.2
haven_2.5.3
Log Start Time: 2024-01-24 15:37:13
================================================================================

> #######This r script runs the log for the main analysis done in the
ISQ paper########
>
> ##load packages
> library(tidyverse)
> library(logr)
>
>
> ##run the analysis for ISQ paper.
> options("logr.autolog" = TRUE)
> setwd("/Users/andrewlugg/Dropbox/sc_project/isq_rr/
final_version_files")
>
> log_open(file_name = "isq_log_v1.log")
>
> log_code()
>
> ###--load data--###
> #NOTE: Data is at the UNSC-SB level of analysis. Data at the UNSC
meeting level available on ISQ dataverse.
> sc_subs <- read.csv("/Users/andrewlugg/Dropbox/sc_project/isq_rr/
final_version_files/isq_sb-level_final.csv")
>
> ###--Use below code to transform to use only UNSC-SB data--###
> #sc_subs <- sc_subs %>% dplyr::select(Case:Notes)
>
> ###---To load UNSC meeting level data use--###
> #meeting_level <- read.csv(file = "unsc-sbs_meetinglevel_2024.csv")
>
```

```
> ###--Start ISQ Replication--##
> ###--For ISQ replication use UNSC-SB yearly level data--###
> sc_subs_yearly <- sc_subs %>% dplyr::select(YearProposed,
sub_count_total:low_strength_created) %>%
>   group_by(YearProposed) %>%
>   filter(row_number()==1)
>
>
> ###--Figure 1--###
>
> #transform data for graphing
> sub_proportion_yearly <- sc_subs_yearly %>%
dplyr::select(c(YearProposed, sb_proposed_sum, sb_created_sum)) %>%
>   pivot_longer(-YearProposed, names_to = "count_subs", values_to =
"count")
>
> #code for figure 1
> ggplot(data=subset(sub_proportion_yearly), aes(x=YearProposed,
y=count, fill=count_subs)) + geom_bar(stat="identity", position =
position_stack(reverse=TRUE)) +
>   scale_x_continuous(breaks = seq(1970, 2020, by=5)) +
scale_y_continuous(breaks = seq(0, 14, by=2)) +
>   scale_fill_manual(labels = c("Created", "Total Proposed"), values
= c("darkblue", "steelblue")) + theme(legend.position = "bottom",
axis.text.x=element_text(angle=90)) +
>   guides(fill=guide_legend(title=NULL)) + ylab("Subsidiary Bodies
per Year") + xlab("Year") + theme_bw()
>
> #ggsave(filename = "figure1_isq2024", device = 'eps', units = 'in',
width = 6.5, height = 4.5, dpi = 300)
>
> ###--Figure 2--###
>
> #transform data for graphing
> sub_proportion_yearly_str <- sc_subs_yearly %>%
dplyr::select(c(YearProposed, high_strength_created,
med_strength_created, low_strength_created)) %>%
>   pivot_longer(-YearProposed, names_to = "count_subs", values_to =
"count")
>
>
> ggplot(data=subset(sub_proportion_yearly_str), aes(x=YearProposed,
y=count, group=count_subs)) + geom_line(aes(color=count_subs), size =
1.15) +
>   scale_x_continuous(breaks = seq(1970, 2020, by=5)) +
scale_y_continuous(breaks = seq(0, 14, by=2)) +
>   scale_color_manual(breaks = c("high_strength_created",
"med_strength_created", "low_strength_created"),
>                      labels = c("High", "Med", "Low"), values =
c("darkblue", "steelblue", "skyblue"),
```

```
>                       guide_legend(title = "")) +
>   ylab("Subsidiary Bodies per Year") + xlab("Year") + theme_bw()
>
> #ggsave(filename = "figure2_isq2024", device = 'eps', units = 'in',
width = 6.5, height = 4.5, dpi = 300)
>
>
> ##--Main Analysis--##
>
> ##--Table 4: SB proposal--##
> model1 <- glm(sub_count_total ~ p5_avg + meeting_number + veto_sum +
YearProposed, family="poisson", data = sc_subs_yearly)
> summary(model1)
>
> model2 <- glm(sub_count_total ~ p5_avg + meeting_number + veto_sum +
YearProposed + log(pk_forces) + cold_war_dum, family="poisson", data =
sc_subs_yearly)
> summary(model2)
>
> model3 <- glm(sub_count_total ~ us_rus_dist + meeting_number +
veto_sum + YearProposed, family="poisson", data = sc_subs_yearly)
> summary(model3)
>
> model4 <- glm(sub_count_total ~ us_rus_dist + meeting_number +
veto_sum  + YearProposed + log(pk_forces) + cold_war_dum,
family="poisson", data = sc_subs_yearly)
> summary(model4)
>
> ##--Table 5: SB Creation--##
> model5 <- glm(sb_created_sum ~ p5_avg + meeting_number + veto_sum +
YearProposed, family="poisson", data = sc_subs_yearly)
> summary(model5)
>
> model6 <- glm(sb_created_sum ~ p5_avg + meeting_number + veto_sum +
YearProposed + log(pk_forces) + cold_war_dum, family="poisson", data =
sc_subs_yearly)
> summary(model6)
>
> model7 <- glm(sb_created_sum ~ us_rus_dist + meeting_number +
veto_sum + YearProposed, family="poisson", data = sc_subs_yearly)
> summary(model7)
>
> model8 <- glm(sb_created_sum ~ us_rus_dist + meeting_number +
veto_sum  + YearProposed + log(pk_forces) + cold_war_dum,
family="poisson", data = sc_subs_yearly)
> summary(model8)
>
> ##--Figure 3--##
> ##use model 3 for expected SBs proposed##
>
```

```
> #create prediction frame
> max_dist <- max(sc_subs_yearly$us_rus_dist)
> min_dist <- min(sc_subs_yearly$us_rus_dist)
>
> s1 <- data.frame(us_rus_dist = seq(from = min_dist, to = max_dist,
by = 0.25),
>                  meeting_number =
mean(sc_subs_yearly$meeting_number),
>                  veto_sum = mean (sc_subs_yearly$veto_sum),
>                  YearProposed = mean(sc_subs_yearly$YearProposed))
>
> predictions <- predict(model3, s1, type="response", se.fit=TRUE)
>
> pred_df <- data.frame(us_rus_dist = seq(from = min_dist, to =
max_dist, by = 0.25),
>                       count = predictions$fit,
>                       lower = predictions$fit -
(1.96*predictions$se.fit),
>                       upper = predictions$fit +
(1.96*predictions$se.fit))
>
> #graph the predicted counts
> ggplot(data = pred_df, aes(y=count, x=us_rus_dist)) +
>   geom_line() +
>   geom_ribbon(aes(ymin= lower, ymax= upper), fill = "midnightblue",
alpha = 0.25) +
>   scale_x_continuous(breaks = c(2,2.5,3,3.5,4,4.5)) +
>   scale_y_continuous(breaks= c(2,4,6,8,10,12)) +
>   xlab("US-Russia Preference Distance") +
>   ylab("Expected Subsidiary Bodies") + theme_bw()
>
> ##--Table 7: SB proposed by body strength --##
>
> #models1 <- glm(high_strength_proposed ~ us_rus_dist +
meeting_number + veto_sum + YearProposed, family="poisson", data =
sc_subs_yearly)
> #summary(models1)
>
> #models2 <- glm(med_strength_proposed ~ us_rus_dist + meeting_number
+ veto_sum + YearProposed, family="poisson", data = sc_subs_yearly)
> #summary(models2)
>
> #models3 <- glm(low_strength_proposed ~ us_rus_dist + meeting_number
+ veto_sum + YearProposed, family="poisson", data = sc_subs_yearly)
> #summary(models3)
>
> models1 <- glm(high_strength_created ~ us_rus_dist + meeting_number
+ veto_sum + YearProposed, family="poisson", data = sc_subs_yearly)
> summary(models1)
>
```

```
> models2 <- glm(med_strength_created ~ us_rus_dist + meeting_number +
veto_sum + YearProposed, family="poisson", data = sc_subs_yearly)
> summary(models2)
>
> models3 <- glm(low_strength_created ~ us_rus_dist + meeting_number +
veto_sum + YearProposed, family="poisson", data = sc_subs_yearly)
> summary(models3)
>
>
> ##--Supplemental Appendix--##
>
> ##--Table 1 appendix: SB level descriptive stats--#
> sc_subs_descriptives <- sc_subs %>% dplyr::select(YearProposed,
YearEstablished, YearTerminated, Resolution,
>                                                   Nay.Votes,
Abstentions, p.5.Vote, US.Veto, Russia.Veto, Strength)
>
> summary(sc_subs_descriptives)
> sapply(sc_subs_descriptives, sd, na.rm=T)
>
> #library(stargazer)
> #stargazer(as.data.frame(sc_subs_descriptives), type = "html",
digits=2, out = "descriptives_sc_subs_appendix.html")
>
> ##--Table 2: SB type 2--##
> summary(as.factor(sc_subs$Subsidiary.bodytype2))
>
> ##--Table 3: SB type 3--##
> summary(as.factor(sc_subs$Subsidiary.bodytype3))
>
> ##--Table 4: SB purpose--##
> summary(as.factor(sc_subs$Purpose))
>
> ##--Table 5: SB proposed and created by decade--#
> creation_rate_decades <- sc_subs %>% mutate(decade =
dplyr::case_when(
>   YearProposed <= 1979 ~ '1972-79',
>   YearProposed > 1979 & YearProposed <= 1989 ~ '1980-89',
>   YearProposed > 1989 & YearProposed <= 1999 ~ '1990-99',
>   YearProposed > 1999 & YearProposed <= 2009 ~ '2000-09',
>   YearProposed > 2009 & YearProposed <= 2020 ~ '2010-20'),
>   decade = as.factor(decade)) %>%
>   group_by(decade) %>%
>   summarize(proposed = n(),
>             created = sum(sb_created_dum),
>             success_rate = created/proposed)
>
> ##--table 6: Meetings and regional focus--##
> #NOTE: Bring in UNSC Meeting level data
>
```

```
> meeting_level <- read.csv(file = "/Users/andrewlugg/Dropbox/
sc_project/isq_rr/final_version_files/unsc-sbs_meetinglevel_2024.csv")
> #meeting_level <- read.csv(file = "unsc-sbs_meetinglevel_2024.csv")
> summary(as.factor(meeting_level$Region))
>
> ##--Table 7 appendix: bodies proposed by region--##
> proposal_region <- sc_subs %>% mutate(Region = as.factor(Region))
%>%
>   group_by(Region) %>%
>   summarize(proposed_count = n())
>
> #--table 8 appendix: descriptive stats
> descriptives <- subset(sc_subs_yearly, select = c(sub_count_total,
sb_created_sum, sb_proposed_sum, p5_avg, us_rus_dist, meeting_number,
>                                                   veto_sum,
cold_war_dum, pk_forces, high_strength_proposed,
med_strength_proposed, low_strength_created))
> summary(descriptives)
> sapply(descriptives, sd, na.rm=T)
>
> #stargazer(as.data.frame(descriptives), type = "html", digits=2, out
= "descriptives_manuscript_analysis.html",
> #          covariate.labels = c("SBs Total", "SBs Created", "SBs Not
Created", "P-5 Distance",
> #                               "US Russia Distances", "SC
Meetings", "Vetoes", "Cold War", "PK Forces", "High Strength", "Medium
Strength",
> #                               "Low Strength"))
>
> ##--Table 9 appendix: SBs proposed using nbreg -- NBREG
> library(MASS)
>
> modelnb1 <- glm.nb(sub_count_total ~ us_rus_dist + meeting_number +
veto_sum + YearProposed, data = sc_subs_yearly)
> summary(modelnb1)
>
> modelnb2 <- glm.nb(sub_count_total ~ us_rus_dist + meeting_number +
veto_sum  + YearProposed + log(pk_forces) + cold_war_dum, data =
sc_subs_yearly)
> summary(modelnb2)
>
> modelnb3 <- glm.nb(sub_count_total ~ p5_avg + meeting_number +
veto_sum + YearProposed, data = sc_subs_yearly)
> summary(modelnb3)
>
> modelnb4 <- glm.nb(sub_count_total ~ p5_avg + meeting_number +
veto_sum  + YearProposed + log(pk_forces) + cold_war_dum, data =
sc_subs_yearly)
> summary(modelnb4)
>
```

```
> ##--Table 10: SBs Created using NBREG--##
> modelnb5 <- glm.nb(sb_created_sum ~ us_rus_dist + meeting_number +
veto_sum + YearProposed, data = sc_subs_yearly)
> summary(modelnb5)
>
> modelnb6 <- glm.nb(sb_created_sum ~ us_rus_dist + meeting_number +
veto_sum  + YearProposed + log(pk_forces) + cold_war_dum, data =
sc_subs_yearly)
> summary(modelnb6)
>
> modelnb7 <- glm.nb(sb_created_sum ~ p5_avg + meeting_number +
veto_sum + YearProposed, data = sc_subs_yearly)
> summary(modelnb7)
>
> modelnb8 <- glm.nb(sb_created_sum ~ p5_avg + meeting_number +
veto_sum  + YearProposed + log(pk_forces) + cold_war_dum, data =
sc_subs_yearly)
> summary(modelnb8)
>
> ##--Table 11 appendix: SB Creation, OLS--##
> model9 <- lm(sb_created_sum ~ us_rus_dist + meeting_number +
veto_sum + YearProposed, data = sc_subs_yearly)
> summary(model9)
>
> model10 <- lm(sb_created_sum ~ us_rus_dist + meeting_number +
veto_sum  + YearProposed + log(pk_forces) + cold_war_dum, data =
sc_subs_yearly)
> summary(model10)
>
> model11 <- lm(sb_created_sum ~ p5_avg + meeting_number + veto_sum +
YearProposed, data = sc_subs_yearly)
> summary(model11)
>
> model12 <- lm(sb_created_sum ~ p5_avg + meeting_number + veto_sum  +
YearProposed + log(pk_forces) + cold_war_dum, data = sc_subs_yearly)
> summary(model12)
>
> ##--Table 12 appendix: SB strength, proposed
>
> model13 <- glm(high_strength_proposed ~ p5_avg + meeting_number +
veto_sum + YearProposed, family = "poisson", data = sc_subs_yearly)
> summary(model13)
>
> model14 <- glm(med_strength_proposed ~ p5_avg + meeting_number +
veto_sum + YearProposed, family = "poisson", data = sc_subs_yearly)
> summary(model14)
>
> model15 <- glm(low_strength ~ p5_avg + meeting_number + veto_sum +
YearProposed, family= "poisson", data = sc_subs_yearly)
> summary(model15)
```

```
>
> ##--Table 13 appendix: SBs Created, Ordered logit
>
> #NOTE: Need to download meeting level data for these regressions
> #meeting_level <- read.csv(file = "/Users/andrewlugg/Dropbox/
sc_project/isq_rr/final_version_files/unsc-sbs_meetinglevel_2024.csv")
> meeting_level <- read.csv(file = "unsc-sbs_meetinglevel_2024.csv")
>
> #estimate ordered models using MASS package
> library(MASS)
>
> model1.ordered <- polr(as.factor(Strength) ~ p5_avg + meeting_n +
veto_sum, data = meeting_level, Hess=TRUE)
> summary(model1.ordered)
>
> model2.ordered <- polr(as.factor(Strength) ~ p5_avg + meeting_n +
veto_sum + log(pk_forces) + cold_war, data = meeting_level, Hess=TRUE)
> summary(model2.ordered)
>
> model3.ordered <- polr(as.factor(Strength) ~ IdealPointDistance +
meeting_n + veto_sum, data = meeting_level, Hess=TRUE)
> summary(model3.ordered)
>
> model4.ordered <- polr(as.factor(Strength) ~ IdealPointDistance +
meeting_n + veto_sum + log(pk_forces) + cold_war, data =
meeting_level, Hess=TRUE)
> summary(model4.ordered)
>
> ##get p-values for ordered models
> ctable1 <- coef(summary(model1.ordered))
> p1 <- pnorm(abs(ctable1[,"t value"]), lower.tail = FALSE*2)
> ctable1 <- cbind(ctable1, "p value" = p1)
> ctable1
>
> ctable2 <- coef(summary(model2.ordered))
> p2 <- pnorm(abs(ctable2[,"t value"]), lower.tail = FALSE*2)
> ctable2 <- cbind(ctable2, "p value" = p2)
> ctable2
>
> ctable3 <- coef(summary(model3.ordered))
> p3 <- pnorm(abs(ctable3[,"t value"]), lower.tail = FALSE*2)
> ctable3 <- cbind(ctable3, "p value" = p3)
> ctable3
>
> ctable4 <- coef(summary(model4.ordered))
> p4 <- pnorm(abs(ctable4[,"t value"]), lower.tail = FALSE*2)
> ctable4 <- cbind(ctable4, "p value" = p4)
> ctable4

group_by: one grouping variable (YearProposed)
```

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NOTE: Log Print Time:  2024-01-24 15:37:13
NOTE: Elapsed Time: 0.164944171905518 secs

filter (grouped): removed 158 rows (78%), 45 rows remaining

NOTE: Log Print Time:  2024-01-24 15:37:13
NOTE: Elapsed Time: 0.0163648128509521 secs

pivot_longer: reorganized (sb_proposed_sum, sb_created_sum) into
(count_subs, count) [was 45x3, now 90x3]

NOTE: Log Print Time:  2024-01-24 15:37:13
NOTE: Elapsed Time: 0.0217461585998535 secs

pivot_longer: reorganized (high_strength_created,
med_strength_created, low_strength_created) into (count_subs, count)
[was 45x4, now 135x3]

NOTE: Log Print Time:  2024-01-24 15:37:13
NOTE: Elapsed Time: 0.190250873565674 secs

mutate: new variable 'decade' (factor) with 5 unique values and 0% NA

NOTE: Log Print Time:  2024-01-24 15:37:14
NOTE: Elapsed Time: 1.06343507766724 secs

group_by: one grouping variable (decade)

NOTE: Log Print Time:  2024-01-24 15:37:14
NOTE: Elapsed Time: 0.00653386116027832 secs

summarize: now 5 rows and 4 columns, ungrouped

NOTE: Log Print Time:  2024-01-24 15:37:14
NOTE: Elapsed Time: 0.00351905822753906 secs

mutate: converted 'Region' from character to factor (0 new NA)

NOTE: Log Print Time:  2024-01-24 15:37:14
NOTE: Elapsed Time: 0.111894130706787 secs

group_by: one grouping variable (Region)

NOTE: Log Print Time:  2024-01-24 15:37:14
NOTE: Elapsed Time: 0.0079038143157959 secs

summarize: now 6 rows and 2 columns, ungrouped

NOTE: Log Print Time:  2024-01-24 15:37:14
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NOTE: Elapsed Time: 0.00381612777709961 secs

NOTE: Log Print Time: 2024-01-24 15:37:15
NOTE: Log Elapsed Time: 0.417789936065674

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Log End Time: 2024-01-24 15:37:15
Log Elapsed Time: 0 00:00:02
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